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THE DIAGNOSIS AND PROGNOSIS OF EPITHELIAL TUMORS OF THE LARGE BOWEL

CHAIRMAN'S ADDRESS

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It would seem that the chairman's address should deal with a subject which is of interest to gastroenterologists and proctologists alike, and for this reason I have chosen to call or recall attention to the question of the diagnosis and prognosis of epithelial tumors of the large bowel. Tumors actually arising from the bowel epithelium must be differentiated masses projecting into the bowel lumen and are merely covered with bowel mucosa. In cases in which the bowel mucosa covering a mass is normal there is no question, but when the mucosa is ulcerated or when a tumor has broken through the mucosa and is projecting into the bowel lumen, as is sometimes the case with prostatic carcinoma or metastatic nodes in the rectovesical pouch, or culdesac of Douglas, some confusion may arise. Certain tumors arising in the bowel wall, such as lipomas or myxomas, may give this picture, as may masses arising entirely outside the bowel, as in the case of presacral dermoid cysts or meningocele. Likewise inflammatory conditions with ulceration, such as amebic dysentery, ulcerative colitis, tuberculosis, actinomycosis, syphilis, lymphogranuloma inguinale, diverticulitis or inflammatory conditions due to intestinal parasites, may simulate to some degree epithelial tumors. If the existence of these conditions is kept in mind, differentiation is usually not particularly difficult either from the gross appearance of the lesions or from other physical observations and laboratory data.

Tumors of epithelial origin should be considered from several points of view; namely, their malignancy or benignity, their extent of development, and their location. While an epithelial tumor may be malignant from its inception, many remain benign, or malignant changes only occur after a long period of time. There is therefore an overlapping of certain tumors in respect to malignancy and benignity, and one must consider this in giving a prognosis.

I purposely do not intend to spend much time on far advanced lesions. If they are viewed through the proctoscope the diagnosis is usually apparent, and in doubtful cases a biopsy will give the desired information. If the lesion is too high for visualization the patient will usually give a history of passage of considerable amounts of blood and mucus, diarrhea or increasing constipation, and perhaps loss of weight and the presence of a palpable tumor mass. Occasionally the first sign of trouble is an acute obstruction, and in these cases one is at the mercy of circumstances. When such lesions are suspected, roentgen examination will almost invariably confirm the diagnosis. The prognosis in these cases is always serious, for, because of the advanced stage of the growth or of the general physical condition of the patient, only 50 per cent are suitable for radical operation. The only other condition that should be termed "advanced" is multiple polyposis, or, more accurately, multiple adenomatosis. The growths usually extend low enough to be visualized, and the x-rays will reveal how much of the bowel is involved. Almost certain development of a malignant growth or death from intercurrent disease is the fate of these patients, if untreated. Ileosigmoidostomy followed later by colectomy is the only satisfactory treatment. Tumors in the stump of the large bowel that is to remain are destroyed by coagulation or fulguration. Treatment of this type carries a high mortality and requires long hospitalization, but it is the only method offering a favorable prognosis.

PEDUNCULATED TUMORS

Since both diagnosis and prognosis and the accepted forms of treatment are quite well standardized in these advanced lesions, I want to call attention particularly to those cases in which the lesion is small, the prognosis more hopeful, and the methods of treatment less well agreed on. I will first consider lesions that can be visualized with the proctoscope—in most cases those occurring within the last 25 cm. of the large bowel. The earliest symptom that may present itself with small tumors in this location is the passage of small amounts of blood and mucus. Unfortunately even this symptom may be lacking or is overlooked by the patient, and small lesions are often discovered only in the course of routine proctoscopic examination. The fact that in early lesions symptoms are absent or trivial is one of the tragedies of diagnosis in diseases of the bowel. In the diagnosis and prognosis of these small lesions I believe they are best divided according to certain physical characteristics; that is, into the flat lesions and the pedunculated lesions. The majority of the pedunculated lesions are in the beginning at least benign adenomas, or, as they are sometimes called, benign polyps. The term "polyp" I think is unfortunate, since it applies to any pedunculated tumor. The so-called fibrous polyp is usually an adenomatous tumor which through superficial infection and lack of blood supply due to torsion or attenuation of the pedicle has become fibrous, most of the glandular structure being destroyed. It would therefore be better to term this tumor a fibrosed adenoma. When it is seen in this stage of development, one can feel sure that any danger of malignancy has

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passed and that removal is necessary only for mechanical reasons. In an adenomatous tumor that has not reached the whitened stage of fibrosis, one cannot be sure that malignant changes will not occur or, in fact, may not already be present. The type of pedicle is of some importance in this respect. A thick-stalked tumor set close to the bowel wall and firmly fixed to the deeper layers carries greater potential danger of malignancy than one that has a long pedicle composed chiefly of mucosa. In either case these tumors should be considered at least as precancerous and removed. If microscopic examination reveals no sign of malignancy, there is no cause for further worry. If malignant changes have occurred, prognosis must be more guarded. Fortunately, the majority of these pedunculated tumors show a rather low grade of malignancy and, if there is a long pedicle, simple removal close to the bowel wall usually produces a permanent cure. If the tumor has a thick short pedicle there is greater danger of metastases, but if there is no invasion of the pedicle by the malignant cells the prognosis is still good. These tumors are best destroyed by electrocoagulation or fulguration, the destruction being carried well into the deeper layers of the bowel itself. The possibility of metastases must always be kept in mind, but, since these are unlikely, it is usually better to take this chance and be content with thorough local removal than to accept the operative mortality involved in subjecting the patient to a major surgical procedure.

The only other pedunculated tumor is the so-called villous tumor, characterized by an almost gelatinous appearing growth with many arborescent branches. These tumors have a tendency to become multiple, small tumors studding the wall round a larger one, much like the spacing of condylomata acuminata. The arborescent portion of the "parent" tumor will sometimes adhere to adjacent portions of the bowel wall, becoming organically attached to it. These tumors may degenerate into or are related to the so-called papillary carcinomas. Local recurrences following removal are not uncommon, and it may be necessary to destroy these recurrences several times before they are completely eradicated. They do not, however, form distant metastases. Their behavior is so like that of the condylomata acuminata that it would seem that the two conditions may be similar in character, condylomata acuminata being the result of some stimulation which occurs in squamous epithelium, and villous tumors the result of simular stimulation in the columnar epithelium of the rectum.

FLAT TUMORS

The flat tumors offer a different problem. Benign adenomas must necessarily in the beginning be but small slightly raised areas in the rectal mucosa, which gradually enlarge and become pedunculated. Therefore any flat lesion not more than 0.5 cm. in diameter may be the beginning of a pedunculated adenoma. On the other hand the serpiginous type of carcinoma, which spreads by encircling the bowel wall like a rodent ulcer, also begins as a tiny elevated area in the mucosa. I have seen two slight button-like elevations on the bowel wall less than 0.33⅓ cm. in diameter, which on removal proved to be adenocarcinomas. Therefore even in the smallest flat button-like lesion, caution is necessary. A flat lesion as large as 0.5 cm. in diameter is most likely a carcinoma, for, if the lesion were a simple adenoma, some evidence of pedunculation would most surely have occurred before the growth reached this width. In considering the flat tumors, two things must be taken into consideration: their size and whether or not there is fixation to the submucous or muscular coats of the bowel. There is no way to make certain whether or not metastases have occurred, but metastatic involvement is quite likely when the tumor is fixed to the deeper structures. Almost without exception a fixed tumor calls for radical surgery. Fixation seldom occurs before the tumor is 0.5 cm. in diameter, and for that reason the majority of tumors up to this size may be removed locally by coagulation or fulguration. On the other hand, tumors of 1 cm. or more in diameter are usually fixed and require radical removal. Fixation is not, of course, the only criterion, and I feel that a flat type of cancer larger than 1 cm. in diameter, regardless of whether or not it moves freely with the excursion of the rectal mucosa, should call for radical operation. The grade of malignancy of the carcinoma is of importance. The flat type cancer is usually of the higher grades; but regardless of this, with flat button-like tumors I would place the importance of fixation above that of the grade of malignancy.

In these small flat lesions, which are usually symptomless, it may sometimes seem ultraradical to insist on a major surgical procedure; but if there is fixation the physician should unhesitatingly insist on the most radical operation the patient's physical condition will permit. The chances of metastatic involvement of adjacent glands are too great to risk only local removal. When single small tumors occur above the field of proctoscopic visualization there are, more often than not, no symptoms that will make one even suspect the presence of a tumor. The earliest suggestive symptoms are the passage of a little blood or mucus, vague abdominal discomfort, symptoms of "irritable colon," or unexplained diarrhea. In these cases a roentgen examination following a barium sulphate enema and plates after evacuation and following the insufflation of the colon with air will sometimes reveal even these small lesions. I am sure, though that only too often the most careful roentgen examination will fail, and not until the lesion becomes more pronounced will it be found. Once suspected, examination should be repeated at regular intervals until one can be sure that no organic lesion exists. If a lesion so demonstrated proves to be a polyp with a definite pedicle and bleeding is absent or minimal, it is permissible to adopt a policy of watchful waiting. If there is doubt, abdominal exploration should be undertaken at once, since the risk of laparotomy is much less than the chance of allowing a malignant lesion to remain. Since the probability of finding a small tumor in this unvisualized portion of the large bowel is not great, the prognosis for tumors in this region is not so good.

CONCLUSIONS

I think, then, that one is justified in drawing several conclusions concerning epithelial tumors of the large bowel:

1. Large epithelial tumors usually give symptoms definite enough to call attention to them. Their diagnosis either above or within the field of proctoscopic visualization is not too difficult and their prognosis is fairly certain.

2. Small epithelial tumors frequently give no symptoms. If low enough to be seen through the proctoscope they can be readily diagnosed; but above this area diagnosis is often impossible.

3. All epithelial tumors except the degenerated fibrous type offer some danger from malignant degeneration.

Some of these tumors, especially the flat button-like lesions, are frequently malignant from their earliest development.

4. Because of this danger all epithelial tumors, no matter how small, within reach of the proctoscope should be destroyed by electrocoagulation or fulguration, since this is a simple procedure devoid of danger. Small tumors with a definite pedicle, which lie so high in the bowel that they cannot be reached through a proctoscope and would require a laparotomy for removal should be observed periodically and removed at once if there is any sign of activity.

5. In some cases, as indicated in this paper, one is justified in simple local destruction of small tumors, though definitely malignant. Caution should be used in advising this procedure, especially in the case of flat button-like lesions. If one is to apply this method at all in malignant cases, one must be careful not to extend its use too far because of its simplicity or the insistence of the patient. In a questionable case the physician must insist on more radical procedures.

1829 Medical Arts Building.

EXPERIENCE WITH ERGOTAMINE TARTRATE IN 120 PATIENTS WITH MIGRAINE

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The use of ergotamine tartrate for the treatment of migraine headaches was first reported in 1926 by Maier.[1] Since then, a number of articles have appeared recording the results of treatment in single or in small groups of patients. The only large group is that of Tzanck,[2] who treated 101 patients with favorable results in a large but unstated percentage. A year ago, one of us (W. G. L.[3]) reviewed the literature and reported the results of parenteral injection in forty-five patients. Additional reports of treatment have appeared as follows: seven patients helped by oral administration (Podolsky[4]), headaches aborted by subcutaneous injection in fourteen of eighteen patients (Brock, O'Sullivan and Young[5]), and in each of nine patients (Logan and Allen[6]). Though the cases reported (including this series) number only 300, the dozen authors who have written on the subject are unanimous that the administration of ergotamine tartrate is effective in the great majority of patients in stopping migraine headaches.

Our experience with ergotamine tartrate now covers nearly three years and a group of 120 migraine patients have been treated by us or on our advice.[7] These have been given a total of several hundred injections for as many headaches and have ingested thousands of tablets.[8] In enumerating the results, we shall first detail the effects of the first administration of ergotamine and then the results of continued treatment of a smaller group.

The patients in this series all suffered from severe periodic headaches. In addition, they had one or more of the following satellite symptoms: hemicrania, nausea or vomiting, visual disturbances, vasomotor disturbance and malaise. They failed to obtain relief from other drugs or treatment, and each gave a history of migraine in other members of the family. Twenty-three of the patients were males and ninety-seven females.

RESULTS

Of the 109 patients who received the drug by intravenous, intramuscular or subcutaneous injection the result of the first administration was abrupt and complete relief in 90 per cent, slight or temporary relief in 4 per cent, no benefit in 4 per cent and headache made worse in 2 per cent. Of the eleven patients who received medication only by mouth, the first trial was followed by relief in 82 per cent, while 18 per cent were made worse.

Of the whole group of 120 patients, 89 per cent experienced abrupt and complete cessation of the headache with the initial use of ergotamine. The cases in which the treatment was given were chronic, and other forms of therapy had not helped. No other drug or treatment which had been reported in the literature has been effective in such a high proportion of patients with migraine. The results, therefore, are dramatic and conclusive. In ergotamine tartrate, the physician possesses a nonsedative drug which almost invariably aborts even the worst of migraine headaches.

Furthermore, the beneficial action of ergotamine seems to be specific, or nearly so, for headaches of the migraine type. Of forty-five patients with headaches from other causes, only seven noted definite improvement after the intravenous injection of the drug. Indeed, intravenous injection in eighty-three nonmigrainous subjects produced headache in six.

Results of repeated treatment are of more importance than those of the initial administration. In general, patients responded to subsequent injection as they did to the initial trial. There were, however, five patients who later failed to obtain the relief experienced at first. Nineteen patients have been followed for more than a year, a few of these having what might be called a "migraine status" with almost continuous headaches. In the others, the attacks before treatment were frequent and severe so that the entire group of nineteen represents a much more than average degree of intractibility. All but one of these patients has obtained relief with each injection of ergotamine. In most of the patients the interval between attacks has not been significantly altered; in a few, especially those most severely affected, the headaches have recurred at more frequent intervals; in a number, the attacks have been more widely spaced. In the entire group of 120 patients, ten have had unusually long periods of freedom since treatment was begun. On the whole, we find that headaches aborted by ergotamine tend to recur at shorter intervals, especially in the first few weeks or months of treatment.

From the Department of Neurology of the Harvard University Medical School and the Neurological Unit, Boston City Hospital, aided by a grant from the Josiah Macy Jr. Foundation.

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5. Brock, Samuel; O'Sullivan, M., and Young, D.: The Effect of Nonsedative Drugs and Other Measures in Migraine, Am. J. M. Sc. **188**: 253 (Aug.) 1934.

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7. Ten patients were treated by our colleague Dr. Stephen Maddock.

8. The ergotamine tartrate (Gynergen) used in this investigation was supplied by the Sandoz Chemical Works, Inc.

The joy of the patient over his miraculous relief from headache is often tempered by certain unpleasant symptoms which he may experience. Nausea occurred in 77 per cent and vomiting in 60 per cent of eighty-nine cases in which such a record was made. In a group of thirty-four patients not subject to headaches who received intravenous injections of 0.5 mg., nausea occurred in 50 per cent and vomiting in 24 per cent. After obtaining relief from headaches by the use of ergotamine, most patients experience a sense of fatigue and lassitude, this being an accentuation of the sensation experienced after spontaneous recovery. A few patients complained of muscular pains which wore away with exercise, or of paresthesias or a sense of substernal or precordial oppression. These various symptoms were not experienced by nonmigrainous patients who were given intravenous injections of the drug. Rarely, gastro-intestinal or other symptoms are sufficiently distressing so that the patient prefers the headache to the treatment.

With serious or permanent ill effects, we have had no experience. Because ergotamine raises the blood pressure, caution should be exercised in administering it to patients with arterial disease. Pregnancy is not an absolute contraindication according to the evidence collected by Barger [9] for ergotamine, even in toxic doses, may not produce abortion. In one patient Schimmel [10] injected 25 mg. in a period of thirteen days without causing an abortion. Excessive and long-continued use carries the danger of ergotism. However, the daily injection of 0.5 mg. for a period of months, and the daily ingestion of from 10 to 15 mg. for more than a week has not produced suspicious symptoms.

THERAPEUTICS

When ergotamine tartrate is injected, the usual dose is 0.5 mg. (the contents of a 1 cc. ampule). In some patients a half or even a third of this dose may be effective and should, therefore, be used. One patient required for relief the injection of 1 mg. Only rarely is a second injection required. We principally made use of the intravenous route because experimental observations were being carried on concurrently. This route has the advantage of giving more prompt relief (in from fifteen to thirty minutes instead of in from forty-five to ninety minutes after subcutaneous injection) and more certain relief and there is no pain due to the injection. Intravenous injection, on the other hand, is more likely to be attended by unpleasant symptoms, such as nausea, vomiting or muscle pain. Intramuscular injection is a satisfactory compromise. Our more intelligent patients have been supplied with hypodermic needles and syringes and have managed their own injections.

In the cat, only 30 per cent of ingested ergotamine is absorbed.[11] In patients the presence of nausea and vomiting is an added obstacle to absorption from the intestinal tract. This probably explains the relatively slight benefit resulting from the use of tablets taken by mouth. However, in milder cases (as represented by our group of patients who received only oral treatment) beneficial results may be obtained from the 1 mg. tablets. From two to five tablets may be given when the headache begins, followed by one or two at hourly intervals until 9 or 10 mg. has been taken or relief has been obtained. Two hours or more may elapse between the ingestion and relief. If nausea and vomiting are violent, atropine sulphate in 0.5 mg. doses may be given in addition to the ergotamine. The enteral and parenteral routes may be used simultaneously. A 0.5 mg. ampule of ergotamine costs at the present time 30 or 40 cents. On the basis of the ergotamine content, the tablets for oral use cost approximately only one-tenth as much. On the basis of therapeutic results, however, we believe that a 0.5 mg. ampule, given intramuscularly, is worth much more than the equally priced five 1 mg. tablets taken orally.

The prevention of headaches by either injection or ingestion of ergotamine may be attempted if the time of the onset of the headaches is predictable. Headaches may thus be postponed or ameliorated but not, except perhaps in mild cases, prevented. It should be emphasized that while ergotamine tartrate is valuable in aborting individual attacks, its use should not take the place of efforts to find and remove the cause or causes of the condition.

THE MECHANISM OF ACTION

The mechanism by which ergotamine tartrate affords relief from migraine headache has not been satisfactorily explained. The occurrence of vomiting appears to bear no direct relationship to the obtaining of relief. Following an intravenous injection, both patients and controls have an increase in systolic and diastolic blood pressure and a decrease in pulse pressure and pulse rate. Investigations thus far carried on in our laboratories indicate that the cerebrospinal fluid pressure is increased, though the rise is less in migrainous than in nonmigrainous patients.[12] The circulatory changes are at their height within a few minutes after the intravenous injection, whereas relief from headache does not begin for from fifteen to thirty minutes. Ergotamine increases the blood flow through the brain [13] and arm of man and causes concentration of the blood.[14] In the cat, it has no consistent effect on the arteries of the pia but constricts those of the dura and the skin.[15]

These results do not in themselves seem adequate to explain the relief obtained from migraine pain. Most authors have suggested that ergotamine paralyzes the motor endings of the autonomic nerves, thus relieving presumed arterial spasm and pain. It might, however, act directly on the sensory fibers of the nerves, especially those supplying the arteries of the brain or dura. The relief obtained from pruritus following the administration of ergotamine is a strong point in favor of the effect on the sensory nerves. However, if this were the case, ergotamine should relieve other types of headache associated with dilatation or contraction of the cerebral arteries, such as headache following an injection of histamine, but this it does not do.

CONCLUSIONS

Ergotamine tartrate was used in 120 patients with migraine headache. The initial trial resulted in abrupt and complete relief from the headache in 107 of these patients. Nineteen patients have used ergotamine for more than a year, and all but one have obtained relief

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on each of the repeated occasions in which ergotamine has been used. In some patients a tendency for the headaches to recur at more frequent intervals or the appearance of unpleasant accompanying symptoms limits the use of the drug. The administration is by intravenous or subcutaneous injection. Ingestion is relatively ineffective. The mechanism by which relief is obtained is as yet unknown.

THE TREATMENT OF PULMONARY TUBERCULOSIS BY ULTRAVIOLET RADIATION

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This study was undertaken to determine the value of sunlight and artificial radiation in the treatment of pulmonary tuberculosis. The members of the staff of the City of Chicago Municipal Tuberculosis Sanitarium believe that if ultraviolet radiation is of value in the treatment of pulmonary tuberculosis it should not fail in all the active forms and should not be limited in its usefulness only to the least active. In their opinion, if ultraviolet radiation should be used only in selected forms of chronic pulmonary tuberculosis it would be impossible to determine whether ordinary treatment in a sanatorium produces an improvement or whether the ultraviolet radiation is a factor in this improvement. It was decided therefore that, if ultraviolet radiation is of value in the treatment of pulmonary tuberculosis, it should show some definite results in three months' treatment in active cases. These patients should have no fever and no hemoptysis and should be able to walk or ride in a wheel chair to the room where ultraviolet treatment is given.

Karsner [1] recently stated that, in the evaluation of methods used in physical therapy, the value of the treatment is not to be measured by the opinion of the physician but rather by the facts he can demonstrate. In this study we have endeavored to follow the statistical method as given by Karsner to decrease whatever errors might arise by the summation of the opinions of interested observers.

In order to obtain facts and not opinions, all the members of the staff of this institution cooperated. The patients were referred to the physical therapy department for ultraviolet irradiation by the physicians in charge of the wards; the blood examinations and roentgenograms were made before and after the three months' course of treatments. The ultraviolet irradiation was given under our direction according to the Rollier technic; the quality and intensity of the radiation were determined by one of us (H. A. C.) and the results were judged by the clinical staff.

Dr. Sweeney, in charge of the laboratory of the Municipal Tuberculosis Sanitarium, examined the reports of the blood examinations and the roentgenograms made before and after ultraviolet irradiation and commented on them without being informed as to the details of each case or the treatment given. The clinical results were recorded on the patient's clinical charts by the ward physicians. It is believed that this method avoided the giving of favorably or unfavorably prejudiced opinions.

In order to check our data further, a series of patients who did not receive ultraviolet treatment were used as controls.

SOURCES OF ULTRAVIOLET RADIATION

Not only is the sun regarded as the source of all energy, but it is also the best of all sources of radiation for ultraviolet therapy. However, owing to climatic conditions, sunlight is not always available for therapeutic use. For example, Tonney, Hoeft and Somers [2] have shown that in the downtown loop district in Chicago during the months of October, November, December, January and February, the ultraviolet content of sunshine is seldom strong enough to provide a minimum erythema dosage. They have also shown that sunshine in that district contains much less ultraviolet radiation than at points outside the congested district, such as the south side of Chicago near Lake Michigan or the Indiana dunes district. Hence, if therapeutic ultraviolet radiation is desired in the wintertime, Chicago physicians are obliged to use some form of artificial radiation instead of natural sunlight. Solariums made of special glass would probably not suffice. In this work we employed artificial radiation during all the months of the year except three—June, July and August. Our source was a large carbon arc lamp, 60 ampere capacity, with C carbons, the cores of which were impregnated with iron, nickel, aluminum and silicon. Polymetallic carbons make the ultraviolet component of the radiation richer than it would be with carbon alone. The spectral intensity curve for carbons impregnated with metals is given by Coblentz.[3]

MEASUREMENT OF ULTRAVIOLET RADIATION

Ultraviolet Meters.—Fairly accurate instruments have been developed recently for measuring the ultraviolet component of artificial radiation emanating from quartz mercury arc (high vapor pressure) lamps and from the carbon arc. One convenient instrument consists essentially of a light-sensitive cell mounted behind a glass filter which permits radiant energy of wavelengths between 2,500 and 4,000 angstroms to pass. This light cell is connected to a sensitive micro-ammeter, and when the cell is in the presence of radiant energy a current is generated, which is measured by the ammeter. This meter is available in two forms—an indicating and a recording type. It appears to be quite satisfactory for measuring radiation from mercury vapor arc (high vapor pressure) lamps and from the carbon arc. This meter is not recommended by the manufacturer for measuring the ultraviolet radiation in sunlight.

Another instrument we employed consisted of a light-sensitive photocell with a direct current rectifier for energizing it, a relay tube and an indicator. The principle of operation is that the photocell, sensitive to certain bands of waves in the light spectrum, allows a minute electric current to pass when it is exposed to radiation. This current is proportional to the ultraviolet radiation energy in the particular band of the spectrum that is used. The small current charges a small condenser, which is connected in parallel to a relay tube.

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Every time the condenser is fully charged, the relay tube "spills over," discharging the condenser and sending an impulse to the recorder. The stronger the ultraviolet energy, the faster the condenser charges and discharges. The counter is calibrated in units of radiation energy. The device used was an experimental model and, as such, did not give the satisfaction that might have been expected in a perfected commercial product. One objection to this unit was that it was not practical to measure the entire ultraviolet content of the spectrum because the photocells responded only to certain bands of waves. This unit, therefore, did not render complete satisfaction as a measuring instrument of the ultraviolet energy of sunshine.

The third meter was of similar construction making use of a photo-electric cell, microgalvanometer, two transparent filters and a battery. Two readings were taken each time the source was metered—first with one filter in front of the tube and then the other. Finally, by means of an empirical formula the ultraviolet energy was calculated in units of radiation energy. The meter was not used for measuring sunlight.

TABLE 1.—*Intensity of Ultraviolet Radiation from a Large Carbon Arc Lamp*

	Current Dosage, Amperes	Distance, Inches	Average Meter Reading, Microwatts	Microwatts per Square Centimeter
Bed 1				
Knees	60	65	39	347.1
Abdomen	60	75	24	213.6
Bed 2				
Knees	62	65	43	382.7
Abdomen	60	76	29	258.1
Bed 3				
Knees	64	65	32	284.8
Abdomen	61	76	24	213.6
Bed 4				
Knees	62	65	38	338.2
Abdomen	62	76	28	249.2

Another method was the use of chemically pure zinc sulphide mixed in a small mortar with a few drops of solution of zinc acetate and ground to a smooth soft paste. This paste is pressed flat between a piece of glass and a piece of transparent quartz. The glass and the quartz plate are held together by rubber bands and exposed to the sunlight with the quartz uppermost. After an exposure of one, two or three minutes, the change in color is matched with the color chart.[4] This method requires an experienced eye to judge the change in hues, since the various shades of gray are difficult to distinguish and was discarded because it was inconvenient for the ordinary nurse giving these treatments to use it.

Another meter operating on the color-changing method was employed. This photochemical ultraviolet meter consists of a solution of leukocyanide of triphenylamine dye sealed in a transparent tube. The tube is mounted in a light-tight box, which can be opened and exposed to the sunshine. The dye is colorless in the dark but turns pink temporarily when exposed to short wavelength ultraviolet radiation. The pink is reduced to a neutral gray by insertion of green filters of different densities. These are calibrated in intensities from 0 to 9 and are calibrated arbitrarily in terms of microwatts per square centimeter to indicate the intensity and the corresponding time of exposure necessary to produce a minimum perceptible erythema. Since this unit depends on the ability of the observer to distinguish a neutral gray and also on his ability to time the intervals between readings correctly, it was not considered a very satisfactory instrument.

Heliotherapy.—All the aforementioned instruments were used at one time or another in an attempt to measure the ultraviolet component of sunlight, but they could not be relied on for that purpose. The photo-electric cells, for example, were sensitive to infra-red radiation and, on many days when the sky appeared clear, the reading indicated that there was less ultraviolet energy than on a foggy or hazy day. The instruments composed of photo-electric cells were discarded as inaccurate for measuring the ultraviolet radiation in sunlight. The color-changing instruments were too difficult to manipulate and read. Thus, many errors were introduced in the observations. Although the photo-electric cell meters were inaccurate, they were used, and certain observations of value were recorded that facilitated the work. For example, it was observed that in the course of a forty minute treatment, the radiation intensity of the sun varied widely owing to such factors as the sun's change of position, dust, clouds and visibility, and usually the conditions necessitated a change in the time of exposure which would be quite different from that contemplated at the beginning of the treatment. These changing atmospheric conditions introduce obstacles which make the control of dosage factors quite impossible. A meter that would faithfully record all the therapeutically useful ultraviolet energy in sunlight and at the same time integrate the energy with respect to time would be the ideal instrument.

The large carbon arc lamp employed in this investigation was tested for intensity with a sensitive photo-electric cell and a galvanometer. The readings were quite accurate, since the meter was calibrated to measure the ultraviolet radiation from a carbon arc and are given in table 1.

DOSAGE

Our experience in these cases confirms Laurens's[5] statement that it is becoming more and more evident that, aside from knowing whether a lamp emits sufficient ultraviolet energy to be of clinical value and knowing about how long an irradiation with it will produce a desired degree of erythema, a modern dosage meter in practical heliotherapy has no value. The important consideration is the individual patient and his reaction, and the dosage is modified accordingly. As the erythemal response is the only physiologic reaction that can be easily judged for each patient, our dosage technic was the use of a modified Rollier method to secure a faint erythema over increasing areas of the body, starting at the feet.

The feet were uncovered the first day for five minutes for exposure to the direct sunlight. On the second day the legs to the knees were exposed for five minutes and the feet ten minutes. The third day the thighs were uncovered for five minutes, legs ten minutes and feet fifteen minutes; fourth day abdomen five, thighs ten, legs fifteen and feet twenty minutes; fifth day chest five, abdomen ten, thighs fifteen, legs twenty and feet twenty-five minutes. These exposures were given in the sunlight to both the front and the back of the body in all instances once daily. The time stated represents half of the total exposure; that is, the total for the feet the first day was ten minutes. With

4. Clark, Janet H.: The Zinc Sulphide Method of Measuring Ultraviolet Radiation and the Results of a Year's Observations on Baltimore Sunshine, Am. J. Hyg. **9:** 646 (May) 1929.

5. Laurens, Henry: Factors Influencing the Choice of a Source of Radiant Energy, J. A. M. A. **103:** 1447 (Nov. 10) 1934.

the carbon arc lamp the exposures were started with two minutes to the feet and increased one minute daily as previously described. As soon as the whole body had received a faint erythema from the daily sunlight or carbon arc treatments, the irradiations were given every other day.

The pigment produced in the skin by sunlight and the carbon arc are nearly alike—a brown to red brown. Many observers believe that an increased production of pigment means an increased tendency to healing. Our sixty patients showed increased pigmentation of the skin, but this bore no relation to the improvement or lack of it.

DANGERS

An analysis of the cases treated with ultraviolet radiation at the Municipal Tuberculosis Sanitarium shows that the ill effects which may follow such treatment have been exaggerated, provided the dosage of ultraviolet radiation is carefully given. The generally listed dangers are:

1. *Dangers of Reactivation of a Quiescent Disease.*—Many of our patients came with the statement that their physicians had told them that they should never expose their chests to ultraviolet radiation, as it would make the pulmonary condition worse. There are no data in the literature to substantiate such a statement. All our patients were exposed by the Rollier technic until the whole body was exposed. In no case was there any reactivation of the pulmonary disease.

The average penetration of the radiant energy from the part of the spectrum used in ultraviolet irradiation with sunshine or a carbon arc lamp is: far ultraviolet, 0.1 to 0.5 mm.; near ultraviolet, 0.5 to 1 mm.; visible light, 1 to 5 mm., and near infra-red, 5 to 10 mm. Therefore the penetration of ultraviolet rays is so slight that it can have no direct action on the lungs. It is known that ultraviolet radiation between 2,900 and 3,130 angstroms activates ergosterol in the skin so that an active antirachitic substance is formed. This does not mean that ultraviolet radiation may not have other beneficial effects or potentialities for harm. But the exposure of the chest in general ultraviolet treatment can have no harmful effect unless there is an overdose of ultraviolet radiation, and the same effect could be produced by an overdose on the other parts of the body with the chest covered.

Sonne's work on the action of the spectrum of sunlight and the carbon light shows that during irradiation with the highest endurable intensity of visible energy the temperature of the skin is 43.8 C. (110.8 F.); at a depth of 0.5 cm. with visible rays it is 47.7 C. (117.8 F.). There would be a real danger in cases of pulmonary tuberculosis if the patients were exposed to sunlight at low levels during the noon hours or too near a carbon arc lamp, but our patients were exposed to sunlight in the earlier morning hours and at a distance of 6 feet (183 cm.) from the carbon arc, so there was no possibility of producing the rise of temperature subcutaneously, as was shown when patients were exposed to the highest endurable intensity of radiant energy.

2. *Danger of Disseminating Infection.*—There are reports in the literature of the dissemination of pulmonary lesions by ultraviolet radiation used in the treatment of pulmonary tuberculosis. Our series of cases showed no such unfavorable results. Some of the patients became worse and the disease spread, but it was not believed by the ward physician that the ultraviolet irradiation had disseminated the infection.

3. *Hemoptysis.*—In our series four patients showed hemoptysis (blood-streaked sputum). All these had had this symptom previously, and the physician in the ward would not attribute it to the ultraviolet irradiation. In our analysis of the literature only eight of the seventy observers of the use of ultraviolet radiation reported hemorrhages, and these observers did not give an accurate statement of the dosage administered. Our conclusions are that carefully given ultraviolet radiation entails no dangers from hemoptysis.

4. *Progressive Tuberculosis and Focal Reactions.*—Observers have reported in cases of uncomplicated pulmonary tuberculosis with fever, although not rapidly progressive, the development of focal reactions during ultraviolet irradiation. Mayer [6] states that (1) uncomplicated active pulmonary tuberculosis with high temperature even though not rapidly progressive is a contraindication to ultraviolet irradiation and that (2) in uncomplicated cases of pulmonary tuberculosis in which the disease process is not yet quiescent and may be accompanied by slight or moderate elevation of temperature, ultraviolet irradiation if employed at all should be used with the greatest caution. In our cases ultraviolet irradiation was used only in cases in which there was slight fever or none at all, and, if the temperature went to 100 F., treatment was stopped until it returned to its former level. Therefore there were no focal reactions in this series.

RESULTS

Underwood [7] gives Kayser of Vienna the credit for being the first to use artificial light for pulmonary tuberculosis, in 1902. An analysis of the literature since that time shows that there is an extraordinary diversity of opinion as to the merits of this treatment. An analysis of the literature shows that, of seventy competent observers, forty-six had favorable and twenty-four obtained poor results or none at all with ultraviolet radiation in the treatment of pulmonary tuberculosis. The detailed analysis is not given here because of lack of space but will be furnished on request.

Blood Examinations.—It was believed that the information that could be obtained from the examination and correct interpretation of the blood was an objective fact that could be used as an aid and as a substitute for personal opinion in evaluating the effects of ultraviolet radiation in these cases of pulmonary tuberculosis.

Red Cells and Hemoglobin: In a review of the literature on the effect of ultraviolet radiation on the blood, out of twenty-seven reports fourteen investigators found the red cells and hemoglobin value increased and thirteen found no effect following general ultraviolet irradiation.

In our series of cases there was no suggestion that ultraviolet radiation had any influence on red cells and hemoglobin in cases of advanced pulmonary tuberculosis.

The red blood cells showed an increase in seventeen and a decrease in thirteen of the thirty cases of pulmonary tuberculosis treated. The average increase was 485,000 and the average decrease was 397,000. In the control series fourteen showed an average increase of 594,000 and sixteen showed an average decrease of 407,000.

6. Mayer, Edgar: Clinical Applications of Sunlight and Artificial Radiation, Baltimore, Williams & Wilkins Company, 1926.
7. Underwood, E. A.: Treatment of Tuberculosis by Light, Brit. J. Tuberc. **26**: 178 (Oct.) 1932.

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The hemoglobin value in these cases showed in twenty cases an average increase of 8.2 per cent and in ten cases an average decrease of 3.6 per cent. The control series showed sixteen cases with an average increase of 7.5 per cent and fourteen cases with an average decrease of 9 per cent.

In the thirty cases treated following thoracoplasty, fourteen showed an average increase of red blood cells of 598,000 and sixteen an average decrease of 39,000. Twenty of these cases showed an average increase of 12 per cent in the hemoglobin value and ten an average decrease of 4.5 per cent.

White Cells: It was decided that a simple estimation of the number of the various types of white cells would not give sufficient information on the action of ultraviolet radiation in pulmonary tuberculosis. It was also difficult to select one method of estimation of the ratio of the white cells as a measurement of the effect of ultraviolet radiation on the activity in pulmonary tuberculosis. Therefore, in the comparison of the white cell

TABLE 2.—*Clinical Results of Ultraviolet Irradiation in Pulmonary Tuberculosis*

Condition	Ultraviolet Irradiation		Controls	
	Number of Patients	Percentage	Number of Patients	Percentage
Improved	17	56.6	40	66.6
Stationary	4	13.4	7	11.7
Not improved	9	30.0	13	21.7
Total	30		60	
Following Thoracoplasty				
Improved	16	53.3	42	51.8
Arrested	9	30.0	28	34.6
Not improved	5	16.7	11	13.6
Total	30		81	

counts, three methods of estimation were considered in evaluating the effect of the ultraviolet radiation on the activity of the pulmonary lesion as measured by the blood examination:

1. In Medlar's concept of the leukocytic picture the monocyte is considered as the white cell forming the primary tubercle and taking a large part in the repair of tuberculous lesions. The neutrophil is the chief cell in the formation of tuberculous abscesses or in enlarging ulcers or cavities. The lymphocyte is the predominating cell only when the lesion is healing. When the neutrophils number over 5,000 per cubic millimeter of blood, it is believed that the tuberculous lesions are undergoing abscess formation or that the ulcerous lesions are extending. When the monocytes number over 700 per cubic millimeter, that is evidence of the formation of new tubercles. If the lymphocytes number over 2,000 per cubic millimeter, healing is in progress.[8]

2. According to Cunningham, if the monocyte-lymphocyte ratio is computed, an increase of monocytes is an index of dissemination of the disease, and an increase of lymphocytes is an index of resistance to the disease. The normal average ratio of monocytes to lymphocytes is 1:4. It is believed that, when this ratio approaches normal or reaches values below normal, this is a valuable indication that the infection is being successfully withstood. An increasing ratio indicates that the patient is losing the fight.[9]

3. The Schilling differential count was interpreted according to Schilling's principle that the stab cells increase first in cases of infection and that if they constitute more than 3 to 5 per cent of the peripheral blood, a toxic element is retarding the normal development of myelocytes and juvenile cells into mature segmented neutrophils. This is known as a "shift to the left," an expression originally used by Arneth to mean an increase in neutrophils with unsegmented nuclei at the expense of the segmented or mature forms. Schilling also believes that in a severe infection the bone marrow is overstimulated, thus causing the myelocytes to develop more rapidly, and the juvenile forms are poured into the circulation.[10]

These three theories were considered in evaluating the effect of ultraviolet radiation on the white blood cell picture in cases of pulmonary tuberculosis. Our compiled statistics show that this form of treatment produced no uniform effect on the white cell count.

Most authors state that ultraviolet radiation stimulates lymphocytosis in men and animals. In our sixty cases of advanced pulmonary tuberculosis this occurred only when the condition was improving, and an increase in lymphocytes occurred when the lesions were healing either with or without ultraviolet radiation.

CLINICAL RESULTS

The clinical results, as listed in table 2, in our opinion showed no definite benefits derived from the use of ultraviolet radiation in the treatment of active pulmonary tuberculosis or in these cases following thoracoplasty.

In cases of thoracoplasty with delayed wound healing, local ultraviolet irradiation with a carbon arc lamp increased the growth of healthy granulation tissue and the tendency to epithelization.

CONCLUSIONS

1. Ultraviolet radiation of the described intensity in doses sufficient to produce a mild erythema and subsequent pigmentation produced no beneficial effects in cases of active pulmonary tuberculosis or in cases following thoracoplasty.

2. Near a large city the changing atmospheric conditions introduce obstacles that make the selection of the dosage factors impossible in heliotherapy.

3. The generally listed dangers following ultraviolet irradiation in cases of pulmonary tuberculosis have been exaggerated, provided the dosage of ultraviolet radiation is carefully regulated.

4. In this series of cases there was no suggestion that ultraviolet irradiation had any uniform effect on the red blood cell count, the hemoglobin value or the white blood cell picture.

8. Kaminski, J.: The Leukocytic Picture as an Aid in the Measurement of Activity in Pulmonary Tuberculosis, New England J. Med. **211:** 245 (Aug. 9) 1934.

9. Muller, G. L.: The Monocyte-Lymphocyte Ratio as a Measurement of Activity in Pulmonary Tuberculosis, New England J. Med. **211:** 248 (Aug. 9) 1934.

10. Cass, J. W., Jr.: The Schilling Differential Count and Red Cell Sedimentation Rate as a Measurement of Activity in Pulmonary Tuberculosis, New England J. Med. **211:** 252 (Aug. 9) 1934.

The Cerebral Ventricular System.—The cerebral ventricles consist of a series of communicating cavities lined with ependymal epithelium. The ventricular system is divided into the two lateral, the third, and the fourth ventricles. The interventricular foramina connect the two lateral ventricles, the foramen of Monro connects the lateral with the third ventricle by way of the interventricular foramina, and the aqueduct of Sylvius connects the third with the fourth ventricle.—Davidoff, L. M., and Dyke, C. G.: The Demonstration of Normal Cerebral Structures by Means of Encephalography: V. The Ventricles, Interventricular Foramina, and Aqueduct of Sylvius, *Bull. Neurol. Inst. New York* **4**:91 (March) 1935.

PSYCHIATRY IN GENERAL PRACTICE

WITH SPECIAL REFERENCE TO THERAPY

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Our conceptions of psychiatry have undergone considerable evolution during the past quarter of a century. The term psychiatry is now used in a very broad sense, embracing all kinds of mental disease, mild or grave, transitory or protracted, benign or malignant; in fine, every variety of mental disorder or abnormality, including personality problems, behavior disorders, child guidance and problems of mental hygiene, social maladjustment, crime and delinquency.

In the present discussion, while using the term in its broader sense, I shall confine myself to a few psychiatric problems of importance and especially to those which serve as a background for the discussion of psychotherapy, which is of the utmost importance in general practice.

To avoid the use of psychiatric technicalities and for the sake of brevity, I shall refer to several well recognized general groups; namely, the affective or emotional group, the schizophrenic group, the organic group, the toxic infective and exhaustive group and the psychopathic personality and neurotic group.

THE AFFECTIVE OR EMOTIONAL GROUP

The disorders of the first group, the affective, may be described as emotional disturbances closely patterned after the emotional swings or upsets in normal life. They are of a benign character and, when uncomplicated, always end in complete recovery. Many such patients never require hospitalization.

The manic depressive psychosis is the most important disorder of this group. This is a very common malady, ordinarily and formerly known as mania and melancholia, and now known as manic depressive psychosis. It is a constitutional disorder which manifests itself in longer or shorter attacks of excitement or depression and which has a marked tendency to periodicity. It is equally frequent among the two sexes and may occur at any age. The chief symptoms of the depressed phase are emotional depression, psychomotor retardation, difficulty of thinking and various subjective feelings of inadequacy and self abnegation, self debasement and reproach, with many other accessory symptoms.

The fully developed attack of manic depressive psychosis, whether of depression or excitement, is quite obvious, usually requiring hospital treatment, and is therefore not pertinent to the present discussion. Manic depressive psychosis, however, may and frequently does occur in very mild forms. These mild depressions and excitements are as common, one might say, as gastric disorders or the common cold. Speaking now of the depressions, these may in some cases, because of their extreme mildness, closely resemble the moodiness and emotional swings of normal life. The analysis of the symptoms, however, will clearly demonstrate that such is not the case.

Every physician has frequently seen patients who complain of a general tired feeling, of inability to interest themselves in their daily routine, of difficulty of concentration, of a subjective feeling of inadequacy and insufficiency, of lack of pleasurable thoughts and of a feeling of hopelessness and helplessness, bordering on despondency. In these cases the symptoms are generally associated with some sluggishness of various bodily functions, which may in many instances be the main occasion for seeking medical aid. The mental symptoms are usually quite marked early in the day, particularly on awakening, and in the afternoon and evening they become somewhat ameliorated. Some of these patients attribute their symptoms to some vague bodily conditions and others to definite environmental factors, such as financial reverses or the death of a near relative or similar emotional stresses.

It must be admitted that a condition of this kind can easily be misunderstood or even overlooked, first because, despite their complaint, these patients still are capable of carrying on their routine work to some extent; they generally do not give evidence of any tangible somatic disorder and, above all, because of the strong desire on the part of the physician (who is not psychiatric minded) to interpret these symptoms on the basis of physical or environmental factors. It is not uncommon to meet a patient of this kind who has received a careful physical examination and has been told that there is nothing the matter with him.

These conditions, as I have already stated, are very common, and failure to recognize their true character frequently leads to serious difficulties, such as business and family complications or aggravation of the malady. But suicide, of course, is the most dreaded complication in these cases. Despondency and loss of the joy of life are an integral part of the group of manic depressive disorders.

I wish to emphasize the accident of suicide for the obvious reason that it is fraught with unpleasant consequences for the physician as well as for the family. Most physicians are surprised to learn that suicides or attempts at self destruction are more common among patients with a mild depression than among those with severer attacks of melancholia. While it is true that the suicidal impulses are stronger and more constant in the severer types, the psychomotor retardation (which means physical and mental sluggishness, marked indecision and inertia), the most characteristic symptom of the disease, often prevents the patient from carrying these impulses into action. In milder cases, whenever the suicidal wave overwhelms the patient, though it may come at rare intervals, nevertheless, because of a lack of marked retardation, inertia and indecision, the patient is capable of carrying it into effect.

A great majority of the suicides reported in the daily press as of patients suffering from so-called mild nervousness are of this kind. A number of years ago, suicide was a misdemeanor, and all persons who attempted it in New York were placed under arrest and brought to the prison ward of Bellevue Hospital. Most of them suffered from mild depressions of the manic depressive type.

It is my custom to impress on students this general rule; i. e., to anticipate a tendency to self destruction in all types of mental depression, and to be particularly careful in mild cases as well as in the beginning of an attack of melancholia or during convalescence and just before recovery from such an attack. It is a matter of clinical observation that even in hospitals a large proportion of suicides occur at these times, for the reasons already stated, and, further, that since the patient appears almost normal or recovered at such times there is apt to be less watchfulness on the part of even the physicians and the nurses.

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Another fact that makes recognition of these mild depressions as mental diseases extremely difficult is that sometimes a patient refers his symptoms to a bodily organ which may have some special significance for him. This may be due to an inferior function or to a fixation of interest often going back to childhood experiences. Some patients refer all these symptoms to the cardio-circulatory function and complain of serious heart trouble; others refer them to the gastro-intestinal tract, and occasionally some complain of rheumatic, neuralgic, neuritic and other familiar disorders.

An elderly woman of high social station has been suffering for some years from periodic attacks of what she terms "heart trouble" and for which she has been treated by various physicians. These attacks last for from a few days to several weeks, during which she retires to her room, keeps aloof from the members of her family and becomes morose, irritable and despondent. She, however, ascribes all her symptoms to the cardiac difficulties, complaining of vague precordial distress. Her physician, now dead, to whom she had been referred as one of the outstanding consultants of his time, recognized the psychogenic nature of the illness, stating that "although she has a slight cardiac murmur, it is not of such a character as to cause the discomfort or the distress complained of." There is also a history in this case of sudden overactivity and exuberance, psychic as well as physical, from time to time. She has a daughter who suffers from the circular type of manic depressive psychosis.

In other words, this patient, who suffers from mild attacks of depression, has been treated for some years for cardiac disease, because she projects the symptoms of an essentially psychic disorder of mild character into a special organ; namely, in her case, the heart.

Alcohol plays a curious and interesting part in connection with these mild attacks of depression. At times alcohol masks the disorder in some patients who associate their attacks with drinking. Many of these persons are regarded as "dipsomaniacs" and treated as such. Some years ago, in a paper entitled "Transient Attacks of Manic Depressive Psychosis," I reported many cases of this kind from the alcoholic service of Bellevue Hospital. In these cases alcohol is an incident to the underlying manic depressive depression.

A very interesting fact is that alcohol in some of these cases serves to shorten these attacks. As a striking example, I may cite the case of a physician, who is now dead. He was subject to attacks of periodic drinking which were called dipsomania and would last for from two to five weeks, after which he abstained from alcohol. His illness was finally recognized as a mild manic depressive disorder, with alcohol as an incident, and treated accordingly. These short attacks, however, associated with alcohol, continued to recur, although not as frequently as formerly. But during several of the periods of depression he failed to use alcohol at the inception of the depression. The latter attacks, unassociated with alcohol, lasted for prolonged periods (from six to nine months).

In this case and in many similar ones that I have observed, the use of alcohol evidently helped to shorten the attacks. Possibly the well known psychologic effect of alcohol, by bringing about mental relaxation, ease and flight from reality, prevents the formation of a superstructure of psychogenic fears and fancies which retard recovery from the depression. It should not be inferred, however, that the administration of alcohol in these depressions is to be recommended to shorten the attacks. It is most probable that the effect of alcohol in the cases described is in the nature of an instinctive compensatory psychotherapeutic measure operating on a certain type of personality.

A few words on the opposite phase of the same disorder; namely, exhilaration instead of depression. The attack of exhilaration with overactivity, fluency in thinking and talking, undue optimism, a subjective feeling of physical and mental well being and exuberance—symptoms diametrically opposite to the depressive phase—may very closely resemble the mood seen in normal persons who are energetic, jolly, talkative, meddlesome and superficially efficient, the "Citizen Fixit" type.

This disorder can readily be recognized if the personality traits just enumerated suddenly appear in a man who is usually quiet and retiring, and particularly when such a person carries his activity, as he will eventually, into more or less irresponsible conduct, coming into conflict with conventions, surrendering himself to various excesses, such as excessive drinking, sexual blunders and reckless extravagance. This type of patient is more of a source of danger to his family and others than is the depressed type, who is mostly bent on self destruction. To permit these patients to follow their own devices may result in disastrous consequences to reputation, virtue, fortune and health.

It should be observed that in both of these types a superficial examination may not disclose the true state of affairs as to the mental condition, as patients suffering from this type of disorder are capable of momentarily controlling themselves to the degree that even an experienced psychiatrist is at times deceived. A safe and wise rule to adopt in order to avoid errors in examination and diagnosis in these cases is to give serious attention and weight to the information furnished by the family and friends and not to depend entirely on a short personal examination at one time.

While dwelling on the affective or emotional group, I must also mention briefly the so-called reactive or situational disorders, which are so common in general practice. These are also benign emotional disturbances with a symptomatology which represents flight from realities and conflicts of life. These patients have a neurotic or psychopathic make up, and naturally the clinical manifestation of the mental upset is highly colored by the personality traits. Some manifest confusion with depression, others manifest fears of injury by others, technically called paranoid projection, while others show excitement and restlessness. The mental mechanisms are mostly in the nature of conversion hysteria. The duration of the illness is dependent on the cause that gave rise to the psychotic upset.

The most striking and familiar examples of this type of reaction were the war neuroses or so-called shock cases. Most of the neurotic reactions observed during the war, such as traumatic neuroses, neurasthenoid and various hysterical syndromes and convulsive attacks, were in the nature of conversion phenomena. I should like to say a few words regarding the conversion mechanism, for the reason that it is most interesting as well as to the point in this discussion.

By conversion, of course, is meant that somewhat obscure but very interesting psychologic mechanism by which the psychic conflicts of the individual are translated into physical symptoms. During the war, many cases of paralysis, blindness, aphonia and convulsive seizures developed that were of a purely functional character. That the underlying motive for such con-

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version was the strong, unconscious wish to escape intolerable situations, such as fear, privations and hardships, is quite evident from the fact that as soon as these elements of hazard were removed, when the patient was invalided home or the armistice was declared, the great majority of these physical syndromes promptly disappeared.

It is important to call special attention in this connection to the fact that this very phenomenon of the conversion mechanism is continuously at work among the civilian population. During a war, obviously, the etiologic factors or unconscious motivations are quite sudden and overwhelming, whereas, during peace they naturally are of an insidious and gradual character, with resultant symptoms that are less potent and spectacular.

It is interesting to note that, since the criminal law has been reenforced making fourth offenders amenable to life imprisonment, there have been more frequent instances of the reactive type of disorder with conversion symptoms among prisoners. This reaction of conversion phenomenon developed in quite the same manner and with an almost similar kind of symptomatology as in the soldiers during a war, since the unconscious motivation for escape is just as overwhelming and compelling.

It is scarcely necessary to point out that many victims of conversion hysteria make the rounds from specialist to specialist, and most of the so-called cases of neurosis of the heart, gastro-intestinal disorders, headaches, insomnia, fainting attacks, dizziness, general weakness of various parts of the body, as well as vague complaints of genito-urinary disorders and various skin diseases belong in this category.

It may be observed further that a similar conversion mechanism, namely, unconscious lying or cheating oneself, is constantly made use of in the ordinary routine of life to avoid difficult and unpleasant situations without of course assuming the dignity of any definite illness.

Just to mention another equally interesting phase of this conversion phenomenon which is the converse of this: there is the patient who, instead of converting the mental conflicts into physical or somatic disorders, resorts to a diametrically opposite process for relief. Every physician has seen many patients suffering from serious chronic disorders, such as tuberculosis or some other progressive and exhausting organic disease, who develop certain mental attitudes in the form of undue optimism, often unreasonable and childish, and make elaborate plans for the future that are obviously impossible of being carried out. In other words, this type of patient also makes use of a similar conversion mechanism, making an unconscious effort to deceive himself of the seriousness of his disease and infirmity by developing mental symptoms, whereas others convert their mental conflicts into physical symptoms.

Space will not permit the discussion of the traumatic and other neuroses, all of which have practically similar mechanisms and motivations. However, I wish to emphasize again the central thought which the discussion of these conditions implies; namely, that there is not so much difference between the so-called physical and mental as has been unduly stressed, that physical diseases are bound up with mental reactions, and that mental conflicts and disorders may be translatable into physical symptoms.

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SCHIZOPHRENIC GROUP

The second is the schizophrenic or dementia praecox group, which has a protean symptomatology. For the purpose of this discussion, it is sufficient to say that schizophrenia is a serious mental disorder with an obscure etiology and pathology, despite the many theories prevalent at the present time.

The present attitude in psychiatry is to regard this as a trend reaction in which the basic symptoms are delusional ideas of a fantastic and bizarre character that are quite at variance with ordinary life. The inner unconscious conflicts and shortcomings of the patient are projected to the outer world and it is blamed for fancied persecution and oppression. Associated with this, there is also a shallow inadequate emotional reaction that is quite characteristic of this malady.

A sudden and fully developed attack of schizophrenia is not difficult to recognize—at least, its psychopathologic character; therefore this entity does not come within the scope of the present discussion. I shall briefly refer, however, to a type of schizophrenia, commonly called the simple type, that develops in a most insidious, gradual and protracted way, and that in its early stages may challenge at times the diagnostic acumen of even the most experienced.

A typical example is that of an adolescent boy who has always adjusted himself fairly well, has caused no trouble to his parents and has been looked on as a model child, frequently inviting the envy of his relatives and neighbors. He gradually becomes shy and lonely, dreamy and imaginative; he shuns the opposite sex and avoids social contacts. A boy of this type may undergo changes of personality that are so gradual that even those who come into intimate contact with him fail to recognize them. There is a gradual indifference to things in general and slight carelessness in personal habits. He becomes indolent, sluggish and lackadaisical and is inclined to stay indoors, sitting about idly, or gazing about more or less aimlessly.

These symptoms are so slight that at first the parents look on them with an indulgent eye—since he never has been a source of trouble and anxiety like the other children—but, as these traits persist, sooner or later the parents become alarmed. Finally the physician is consulted and after making a careful physical examination he finds the boy "quite sound." He so informs the family, usually adding that the boy needs discipline, as he is in good health but lazy.

This kind of history one hears almost daily. In justice to the physician it must be said, however, that the average patient of this kind appears quite normal on casual examination. The somewhat shifty eyes, the indifferent and immobile facial expression, cold, clammy, often cyanotic hands, the disinclination to talk, with hesitating responses to questions, all these, in the absence of any obvious trends and delusions, cannot readily be recognized as evidences of any abnormal mentality, unless one has mental pictures of many similar cases. The most essential reason, however, for the physician's failure to recognize such cases is, let me again repeat, because he is not psychiatric minded; he is accustomed to think in terms of the physical or, putting it in another way, his training (or rather his lack of training) was such that he does not think of looking for mental situations and explanations unless they obtrude themselves on him.

What was said with regard to the preceding group, as a guide to the recognition of these mild, obscure con-

ditions, is quite applicable here as well; namely, that the account and history given by the family should be accorded great weight and importance. In mild cases these patients are capable, even more so than in cases of mild depression or excitement, of dissimulating in the presence of the physician and appearing quite normal, especially if one is looking only for somatic anomalies.

Alcohol also plays a part in this group similar to that in manic depressive psychosis. It is a matter of clinical experience that in many potential schizophrenic patients, alcohol has been resorted to by the individual as a method of sublimation in an attempt to prevent the latent disease from becoming manifest. In other cases it might appear to act as a precipitant in that the individual may suffer from the toxic effect of alcohol in the form of delirium or hallucinosis, which will mark the starting point of the schizophrenic attack.

ORGANIC PSYCHOSES

Organic psychoses are mental disorders that are an expression of coarse organic disease of the central nervous system. There are various types of organic lesions and injuries to the central nervous system, such as senile atrophy, arteriosclerosis, trauma causing injuries and damages to the brain substance itself, neoplasm, abscess, hemorrhage, encephalitis and encephalopathia. The psychopathologic symptoms of these conditions vary somewhat, according to the nature, extent and location of the organic pathologic processes, but the fundamental symptoms common to all, which are known to psychiatry as the organic reaction syndrome, are practically the same. The basic mental symptoms in all organic diseases of the central nervous system are clear enough when the disease is well developed, but often the earliest symptoms are subtle emotional changes or alterations in personality.

Because of limited space I shall merely refer to one organic psychotic disorder, the early recognition of which is most important to the general practitioner; namely, dementia paralytica, commonly known as paresis.

I need scarcely say that this is a condition of meningo-encephalitis of syphilitic origin. When a case of dementia paralytica is fully developed, there is rarely any difficulty in recognizing the character of the disease, but in the incipient stage it is sometimes most baffling. This is particularly so because, with the exception of comparatively few cases in which so-called neurasthenic symptoms are exhibited, these patients are not conscious of any ill health and therefore do not appeal to a physician for assistance. On the contrary there is a false sense of well being, exhilaration and superficial efficiency that obscures the picture and misleads even the family and friends. Occasionally these patients in addition will resort to alcohol, which masks and further complicates the clinical picture. The history and accounts of the immediate family and friends likewise are very often conflicting and contradictory.

The most important guide for the diagnosis under these circumstances is the occurrence of a gradual but radical change in the personality of the individual. If a man between the ages of 35 and 45, who heretofore has been well behaved, well mannered and temperate, a good father and a prudent business man, suddenly exhibits a marked change in his business, social and ethical principles, such a change should strongly suggest a possible case of dementia paralytica.

Of course, after the patient is in the hands of a physician, the earliest reliable symptoms are the changes in the pupillary action, lapses of retentive memory, irascibility and, above all, the characteristic disorder of speech that is almost pathognomonic of this malady. The unfortunate errors, however, in the early diagnosis of dementia paralytica happily have, during recent years, been reduced materially, owing principally to the fact that the serology is a great help in the diagnosis of these cases and that the average physician now most properly, as a matter of routine, makes serologic examinations.

I have briefly mentioned dementia paralytica for the sole reason that unless the condition is recognized promptly these patients are capable of doing much harm to themselves and particularly to their families, from a physical, social and financial standpoint. I have repeatedly seen the good name of a family as well as a respectable fortune blasted within a short period of time, solely because a patient was not brought under timely control.

THE TOXIC INFECTIVE AND EXHAUSTIVE GROUP

The fourth group, the psychoses symptomatic of somatic diseases, is still more familiar than the preceding organic type. These mental disturbances are obviously the expression of various toxic and infectious disorders, as well as of the profound exhaustion due to chronic and debilitating physical diseases. The mental symptoms are essentially similar to those of the coarse organic brain diseases, with the exception that the symptoms of the former are more acute and pronounced than those in the organic psychoses.

The action of all toxemias caused by exogenous and endogenous poisons, as well as profound debility and exhaustion, on cortical cells is in the nature of a trauma, hence the similarity of the psychotic symptoms. The perceptive faculties are seriously affected, giving rise to false sense perceptions—clouding of consciousness, disorientation and a dreamy and confused mental state, otherwise known as delirium, with which the general physician is so familiar, since these conditions are encountered mostly in private medical practice and in general hospitals. The type and intensity of the delirium are determined by the variety and degree of the poison, as well as the personality make up and susceptibility of the individual patient. Among such conditions may be mentioned alcohol and various other exogenous poisons, also endogenous poisons due to uremia, diabetes, anemia, cardiac disorders, tuberculosis, hyperthyroidism and many other conditions that are too well known to need mention.

The diagnostic difficulties in this group are much less than in other types of psychotic disorders. Unlike other mental disorders, there are physical illnesses that stand in a causal relationship to the mental disorder and make the recognition of this type of psychosis much simpler.

The detailed discussion of the treatment and handling of these conditions in general practice, from a psychiatric point of view, although interesting and profitable, will not be entered into here.

The treatment in these cases depends obviously on the underlying physical condition. One should be very conservative in the liberal and especially the persistent administration of hypnotics and sedatives of various sorts, as obviously these are apt to intensify the mental condition or produce it in susceptible patients. However, when given only at times of absolute necessity,

they should be given in sufficiently large doses to bring about the desired rest and sleep, but should not be continued for long periods. Psychotic patients of all kinds have an astounding tolerance for hypnotics and sedatives, and if they are given in repeated small doses restlessness is apt to be aggravated. If this is interpreted as an indication for larger and larger dosage, a drug delirium may be superimposed on the primary disorder.

Another important factor is the environment. Keeping in mind the nature of the mental symptoms, particularly the disorders of perception, various hallucinations and mental confusion, one should provide a very simple environment, with abundant light and air, with as few persons in attendance as possible; otherwise fatigue and disquieting distractions will accentuate the mental symptoms. It should also be added, however, that the attending physician at times seems to become unduly alarmed as soon as mental symptoms appear and shows a tendency to transfer the patient immediately to a hospital.

While it is true that some of these patients eventually need to be taken to a psychiatric hospital, many of them may, if properly treated, have an illness of short duration and can with marked success be treated at home or in a private room in a general hospital, provided of course, that the facilities will permit. Transferring a patient suffering from this type of symptoms to strange surroundings, particularly to crowded and more or less turbulent hospital wards, with their panoramic and complicated activities, frequently intensifies the delirium and mental confusion.

I am conscious of the fact that I have given a rather sketchy discussion of the psychiatric problems which may arise in general practice, and of necessity have not touched on many important problems. Furthermore, the foregoing facts, rapidly reviewed, have been presented mainly from the standpoint of a background for the brief discussion of psychotherapy which, I believe, is the psychiatric problem of far-reaching importance in general medicine.

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PSYCHOTHERAPY

What is psychotherapy? It is the art of making use of the mental attitude of the patient as a curative factor in the treatment of his illness. Psychotherapy is directly dependent on the faith or the confidence of the patient that his illness will be cured. It matters little, as far as the patient is concerned, whether this faith or confidence is inculcated in him through a person or group of persons, or whether it is an agency which is tangible or a mere fancy. Every one readily admits the great potency of faith and confidence in all walks of life; the will to do, optimism, self reliance and self confidence are admittedly the essential qualities and factors for success in life. I have always thought that man makes use of only a very small fraction of the talents with which Nature has endowed him.

I have occasionally seen a patient who, despite his diseased and disordered mentality, has accomplished things that he was absolutely incapable of doing prior to his illness; this was possible because the critique, as a result of the mental disorder, was in abeyance and the patient could therefore give full sway to his native endowments.

But when it comes to the medical profession—the healing art—one is not inclined to accord a great deal of value or virtue to "purely" psychologic factors. Almost daily one hears of religious or semireligious organizations that have established new clinics for the treatment of the sick. The number of healing cults of various kinds is legion—even the fortune tellers, clairvoyants and astrologers derive the greatest part of their income from invalids. One is accustomed to look on these reports with ridicule and ironic skepticism, assuming them to be false and chicane, and often justly so. But is it reasonable to think that these cults of various kinds could multiply and prosper if they did not, at least to some extent, deliver some sort of wish-fulfilling relief? While they undoubtedly do a tremendous amount of harm and irreparable injury to many, the real fact is, and investigation will confirm it, that even the very garbled, distorted use or misuse of the principles of psychotherapy, no matter under what cloak, accomplishes much, healing some, ameliorating others and comforting all.

In a recent life of Père Marquette, known as the apostle to American Indians, the following significant observations appear:

> Among certain tribes the medicine men believed, or professed to believe, in suppressed desires as the cause of disease. They believed that there are two main sources of disease; one of these is the mind of the patient himself, which unwittingly craves something and will torment the body of the sick man until he possesses it; for they hold that there are in every man certain inborn desires, often unknown to himself, upon which his happiness depends. For the purpose of ascertaining such innate and ungratified appetites, they summon soothsayers, who they think have a supernaturally imparted power to look into the inmost recesses of the mind.

Is this not an astonishingly accurate outline of the principles of dynamic psychology? One might almost suspect that this hypothesis and belief on the part of this primitive people was formulated by the followers of Freud.

The priests and doctors in ancient times, or the medicine men among primitive peoples, were the prototypes of various healing cults. Obviously in the absence of any scientific knowledge of the human body and its functions, they discovered certain principles of psychotherapy empirically, as a curative force, and tinctured them with magic, superstition and mysticism, in the manner followed by the modern cults.

Furthermore, psychotherapy as a healing force is evidently much more ancient than the practice of medicine based on physiologic principles alone. Is it not possible that scientific medicine, in its endeavor to shake off superstition and black magic, has swung to an opposite extreme and has discarded psychic factors entirely, thus becoming perhaps too materialistic?

As has been pointed out, psychotherapy presupposes a sentient and selective relationship toward the source of the healing force; namely, the physician. I should like briefly to refer here, even at the risk of digression, to the fact that this very psychologic principle, namely, that the patient must have freedom of choice in the selection of his physician, is the most serious objection to the socialization of medicine. The experience of large organizations, civic, industrial, military and otherwise, that provide medical care for their members, has amply demonstrated this fact. Such organizations although, as a rule, very well equipped, have failed to render satisfactory medical care commensurate with their effort and investment. The directors of the medical services of municipal police, fire and sanitation departments and many similar organizations readily admit that the sick members of such groups always prefer to be treated by physicians outside of the organi-

zations. In other words, they would rather be treated by physicians of their own selection. During the late war, although the army had well organized medical units in the various military camps, there was a definite tendency on the part of the soldiers to seek medical aid from physicians in the neighboring villages and towns.

I think one is justified in asserting that socialized medicine would endanger public health by depriving the individual of one of the basic and most effective factors of therapy.

The use of psychotherapy in psychiatry has made tremendous progress in the past two decades and has acquired a fairly well defined and scientific technic. Just to mention some of these methods:

First: Simple advice and counsel, well directed, with full knowledge of the situation regarding the patient's problems and difficulties.

Second: The method of persuasion, which consists of the elaboration of the former, with a more logical, forceful and convincing discourse, going into considerable detail in a constructive manner as to the significance of the conflicts and how to meet the situations.

These two are simple, common sense methods that are made use of by every one and that are applicable to everyday affairs of life.

But the more effective methods of psychotherapy are those by which one can obtain important information concerning the patient's personality make-up and his intimate problems and conflicts, not only of the present but of the remote past as well. A substantial and enduring readjustment by means of psychotherapy can be brought about only through a clear recognition of such conflicts. Frequently the patient himself is not conscious of them. Among the more effective methods of psychotherapy may be mentioned:

1. Hypnotic catharsis. This technic consists in making a searching inquiry into the life history of the patient while he is in a state of hypnosis, with a view of uncovering his conflicts, longings and disappointments. The patient is encouraged to talk spontaneously and without interruption, except for occasional questions to direct the trend of associations. Many physicians are familiar with Dr. Breuer's famous case of a young neurotic woman who was successfully treated by this method. Breuer later directed the attention of Freud to the case, and it was their joint investigation which may be said to have marked the cornerstone of psychoanalytic psychology.

It should be said in passing that hypnosis as a therapeutic measure has again been revived in recent years, particularly abroad, after having fallen into disuse for several decades.

2. The most important and valuable method of psychotherapy is the psychoanalytic method, for which a definite technic has been developed, based on the principles of free association.

The fundamental principle in the psychoanalytic method is to uncover the individual's childhood and infantile experiences, which freudian psychology assumes to be the cause of later neurotic conflicts. It is believed that in this manner the neurotic patient will again, as it were, live and reexperience these infantile psychic traumas, with the result that their painful emotional value will disappear by being brought into consciousness.

The psychoanalytic psychology has been more or less modified from time to time by various former pupils of Freud, notably Jung and Adler, who have established separate schools of psychoanalytic psychology with some following. Such modifications, however, refer only to the freudian psychology, but not to his psychoanalytic method or procedure, which still remains a monument to his genius.

3. The reeducation method. This is made use of, as the term implies, as an aid in all psychotherapeutic methods, supplementing them and utilizing the important information obtained in the upbuilding of the patient's personality. The reeducation method is especially effective if combined with hypnotic suggestions.

It is, of course, quite clear that in the various methods of psychotherapy, the fundamental effort is to secure the confidence of the patient or, speaking psychoanalytically, to establish transference on the physician. Secondly, and equally important, is a clear understanding on the part of the physician of the conflicts of the patient in order that psychotherapy may be applied in a systematic and well directed manner. The method and technic of psychotherapy are modified according to various circumstances, such as time, character of the illness and reactions of the patient.

The question may properly be asked whether psychotherapy has any place at all in general medicine (since the latter deals mostly with somatic disorders) and if so to what extent? Some years ago such a question would have evoked incredulous skepticism, but now, happily, such is not the case. The value of psychic factors in the treatment of somatic diseases is fully appreciated by almost every physician. The problem now is rather its technic and its practicability in the course of a crowded general practice.

As has already been stressed, the physician's ideas of physical and mental conditions have undergone radical changes; he now knows that the difference is not so great, that all mental diseases, whether functional or organic, have a somatic component and that all somatic disorders, however slight or insignificant, have mental reactions. It is no longer speculative to state that the mental attitude of a person, including his emotional reaction, is capable of acting directly on the bodily functions or even on the tissues in such a manner as to cause pathologic changes, or at least to contribute to the development of disease processes. The physician no longer thinks in terms of the "purely" mental and physical, but rather how much of the mental and how much of the physical; he recognizes that psyche and soma are one and inseparable. It is also quite clear and certain that every person suffering from physical disease develops a definite mental reaction toward such a disease, and that the emotional and mental attitude in turn is capable of either enhancing or retarding the curative processes. It is at least to this limited extent that the general practitioner is able to and should practice psychotherapy.

Incidentally this revolutionary change in the general conception of the physical and mental has given great impetus to restoring psychiatry to medicine and medicine to psychiatry. There is at present a definite movement on foot throughout the country, especially in hospitals, to integrate the medical, surgical and psychiatric points of view under the same roof. The new psychiatric unit of Bellevue Hospital was conceived, planned and organized with this very purpose in mind; namely, to afford every facility for the combined effort of the surgeon, physician and psychiatrist in the treatment of the sick, and I think it is one of the earliest as well as the most comprehensive endeavors of its kind.

I fear that in speaking of psychotherapy and its technic as applied to psychiatry I may have conveyed the impression that the practice of psychotherapy in general is a formidable and complicated procedure. But such is not necessarily the case. Psychotherapeutic principles are quite simple and constitute the chief factors in all human relationships and activities—social, religious, political and commercial. The skilful salesman and the astute politician owe their success to psychologic principles similar to those which enable the physician to gain the confidence of his patient. The nature of the physician's professional work—the practice of medicine—is peculiarly adapted to the promotion of psychotherapeutic principles. He comes into contact with various types of personalities, young and old, rich and poor, good and bad, saint and sinner, divested of false pretense and veneer, and in the true nakedness of their character; thus, he has the opportunity to gather accurate knowledge and experience as to types, traits and reactions, which are so essential and indispensable in the practice of psychotherapeutics. In fact, whether he wills it or not, the physician is a psychotherapeutist and practices it daily in his professional work. He is forced to do so by his patients, since they look for it and demand it. Most physicians practice it unconsciously and some, although appreciating its value in a general way, carry it on in a haphazard, desultory manner.

My plea is to be conscious of this psychotherapeutic power and to practice it in a systematic and well directed manner. If I were asked to suggest a simple formula for the utilization of psychotherapeutic principles in general medicine, I should say: Be psychiatric minded, first, last and all the time. While making repeated routine examinations of the pulse, temperature and various organs and functions of the body do not ignore the mental, surely not an inconsiderable function. Why not add to one's general routine the habit of evaluating each patient's personality and mental makeup, his general emotional reaction, his appearance and demeanor while under examination, noting particularly his emotional reaction toward his complaint and illness?

Let the patient talk not only about his illness but also about himself and his personal affairs and relationships freely and spontaneously, and with as little interruption as possible. Let him tell his story in his own way. With a procedure even as simple as this, it is amazing the amount of information that the patient will disclose, revealing valuable psychic and emotional factors intimately related to his physical illness or complaints.

It should be remembered that in the application of psychotherapy consistency is of the utmost importance. The value of reassurance, confidence, hopefulness and well directed advice in the treatment of the sick is readily admitted, but it is frequently overlooked that in order to be effective, psychotherapeutic principles must be utilized, not only in words, but in deeds as well; not in a haphazard and aimless manner, but by following a deliberate and well laid plan with a definite goal. To reiterate, there should be in psychotherapy continuity and intelligent consistency, just as obtains in physical therapy.

With a fully developed consciousness and a modicum of technic, psychotherapy yields results far beyond one's expectations.

If the interest and enthusiasm of the younger generation of physicians in psychiatry, and particularly that of the undergraduate students, may at all be regarded as a criterion, it may safely be predicted that the time is not far distant when the physician will not be content to be merely a skilful physical diagnostician and therapist but will be a doctor of the mind as well, and when to his skill and intelligence he adds these human qualities of clear and comprehensive insight into the psychic conflicts of his patient, he then becomes in a glorified way the doctor and priest of old, but with science and humanity as his aids, instead of superstition and reliance on the magical and the miraculous.

115 East Sixty-First Street.

CONCURRENT OSTEOGENIC SARCOMA IN BROTHER AND SISTERS

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Instances of the development of sarcoma in successive generations have been reported.[1] The appearance of simultaneous, symmetrical sarcoma in unioval twins has been described by McFarland and Meade,[2] but we have been unable to find a previous report in medical records of the spontaneous and concurrent development of bone sarcoma in several members of one family: a brother and two sisters, aged severally 23, 17 and 13 (fig. 1).

Fig. 1.—Left to right: Matilda T., aged 17 years; Lennie T., aged 13 years, and George T., aged 23. Note enlargement in lower right thigh of Matilda T.

These cases are presented, therefore, with the hope that they may complement the evidence in favor of

1. Silcock, A. Q.: Hereditary Sarcoma of Eyeball of Three Generations, Brit. M. J. **1**: 1079, 1892. Pinard, M., and Versini: Case of Probable Hereditary Transmission of Sarcoma, Bull. et mém. Soc. méd. d. hôp. de Paris **52**: 653-657 (May 3) 1928.

2. McFarland, J., and Meade, T. S.: Genetic Origin of Tumors Supported by Simultaneous and Symmetrical Occurrence in Homologous Twins, Am. J. M. Sc. **184**: 66-80 (July) 1932.

some of the disputed assumptions concerning the etiology of sarcoma and may possibly suggest leads in the study of the disease.

CASE 1.—*History.*—George T., aged 23, a farm boy, complained of pain and swelling about the right knee. In August 1933 he began to suffer slight "rheumatic" pain and stiffness of the right knee. He believed that this was due to walking on concrete pavement, so he quit the job which involved this and stayed on the farm. Some improvement followed, and he was able to work until December 30, when he received a severe blow on the right knee; a large limb on a felled tree, bent and under great tension, flew against his knee, when it was suddenly released as he chopped it. He suffered considerable pain at the time and became faint. He was unable to walk for several days, owing to the swelling about the joint. The condition improved for a time but he began to notice a localized mass about the anteromedial aspect of the upper extremity of the tibia the latter part of January 1934, the knee becoming swollen, painful and limited in its motion. About three weeks later the tumor was lanced, but neither fluid nor pus was obtained. The mass about the knee steadily and gradually increased in size, the distal leg and foot becoming edematous. The patient continued to have much pain about the knee. He had lost 40 pounds (18 Kg.) in three months and was brought to the Georgia Baptist Hospital, March 19.

Fig. 2 (case 1).—Right knee, showing sclerosing type of osteogenic sarcoma.

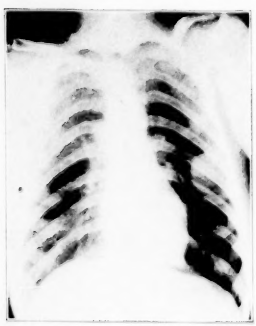

Fig. 3 (case 1).—Thorax, showing metastasis to the lungs.

The patient had had pneumonia in 1929; otherwise his past history was without significance.

The family history is common to the three cases reported in this paper: There have been no other neoplasms in the family, so far as is known. The people are of Irish-English extraction. The paternal grandparents were second cousins and died of cardiovascular disease at 60 and 65 years. There were several cases of tuberculosis in the mother's family. She and the father were in good health. The Wassermann and Kahn tests were negative for both. The paternal aunts have large families in good health with no history of tumors. Besides Matilda, aged 17, and Lennie, aged 13 (see individual histories), there are three other sisters, aged 21, 19 and 10 years, and a little brother, aged 6 years, all in good health.

Several years before the father had a slow growing tumor on the calf of the leg. It opened spontaneously and drained a mealy substance. Healing ensued, and now on examination the site of the tumor presents a normal scar.

Examination.—Physical examination, March 21, showed notable emaciation. The temperature was 98.3 F., the pulse 80, and the respiration rate 22. Only the right knee and leg were of interest. The leg was maintained in an attitude of flexion. Anteromedial and just distal to the right patella there was a firm, fixed mass the size of a large orange. Centrally the mass was fungating and soft, the site of the lancing unhealed.

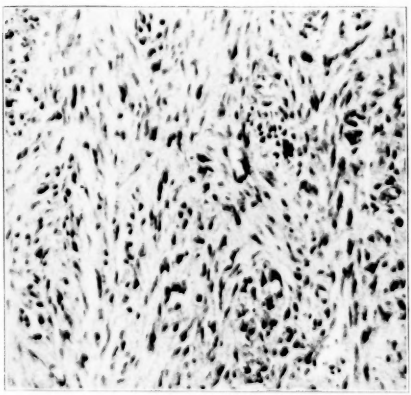

Fig. 4 (case 1).—Section from tumor, showing spindle cells and syncytial giant cells. The stroma is more conspicuous than in sections from the other two cases. Osteogenic sarcoma.

Movements of the knee were painful and limited. The leg and foot showed pitting edema.

The blood Wassermann and Kahn tests were negative. The red blood cells numbered 4,220,000 (dehydration), with hemoglobin 85 per cent; white blood cells, 11,900; neutrophils, 92 per cent; large lymphocytes, 2 per cent; small lymphocytes, 6 per cent.

The urine was scanty, with much phosphate sediment and a total acidity of 75 degrees.

Roentgen examination of the right knee (fig. 2) showed a large, dense mass about the head of the tibia. There was a trabeculated bone deposit extending out into the mass. The upper third of the tibia presented a marked increase in density, especially in the posterior cortex. There were some areas of bone destruction in the shaft.

There was a large nodule in the outer zone of the upper margin of the lower left lobe (fig. 3). The nodule measured about 5 cm. in diameter and lay in the fourth interspace in the axillary line. A small nodule was to be seen just below the large one; there was a small nodule in the lower right lobe directly behind the anterior end of the sixth rib.

The diagnosis was sarcoma of the right tibia of the sclerosing type, with metastasis to the lungs.

Progress Notes.—The patient continued on to a cachectic state. The tumor became quite large (the size of a small

watermelon) and the leg and foot enormously swollen. When seen a few days before the patient's death, May 19, the tumor was dusky and extremely vascular.

Microscopic Study.—The tumor was highly cellular and malignant. Many medium-sized giant cells were present (fig. 4). The final diagnosis was round-cell osteogenic sarcoma.

CASE 2.—*History.*—Lennie T., a schoolgirl, aged 13 years, complained of a painful mass about the right shoulder. When coming home from school about the middle of January 1934, the patient tripped and fell on the sand road, striking the right shoulder. She suffered immediate pain in the shoulder and noticed interference with motion. The physician manipulated the arm in an attempt to reduce what was thought to be a dislocation but desisted after complaint of extreme pain. She was in bed three weeks, crying often, owing to the very painful shoulder, which was somewhat swollen. After she got up the shoulder looked much better for a few days; then it began to swell again. Gradually a mass appeared about the anteromedial aspect of the right shoulder. She continued to have much pain and lameness of the right shoulder.

Her past history revealed nothing of importance other than a fracture of the right clavicle three or four years previously.

Examination.—March 19, 1934, the temperature was 99.2 F., the pulse 100 and the respiration rate 22. The patient was fairly well nourished. The shoulder alone was noteworthy. There was a hard, immovable tumor attached to the anteromedial aspect of the upper third of the right humerus. There was slight warmth and redness but no bruit. The mass was of infiltrative hardness. There was some limitation of the movements of the shoulder joint.

The blood Wassermann and Kahn tests were negative. Examination of the blood showed: red blood cells, 3,330,000; hemoglobin, 75 per cent; a slight increase in thrombocytes; white blood cells, 6,800: neutrophils, 86 per cent; large lymphocytes, 1 per cent, and small lymphocytes, 13 per cent.

Examination of the urine showed: sugar, negative; albumin, 2 plus; total acidity, 10 degrees; no casts; from 6 to 8 erythrocytes and from 10 to 12 pus cells to a high power field.

Roentgen examination, March 30, of the right shoulder (fig. 5) showed complete destruction of the upper third of the right humerus. A pathologic fracture was seen in the upper third of the bone. A large mass about the osteolytic area infiltrated the soft structures. There was considerable bone deposit in the mass. Extension of infiltration was only to the epiphysis above, not involving the humeral head.

Fig. 5 (case 2).—Right shoulder. Osteogenic sarcoma, bone destruction mesial to tumor. Note elevated periosteum. Clavicle shows healed fracture at junction of middle and outer third.

The diagnosis was destructive osteogenic sarcoma.

The chest showed no metastasis on roentgenograms made in the middle of March and later in the middle of May.

Radiotherapy was administered, March 24, and again three days later. There was no response.

Progress Notes.—As the tumor enlarged the patient became more and more anemic and finally cachectic, repeating her brother's course. She died, July 7.

Microscopic Study.—Section (fig. 6) shows highly cellular tissue. The cells were round and embryonal in type. The final diagnosis was round-cell osteogenic sarcoma.

CASE 3.—*History.*—Matilda T., aged 17 years, complained of intermittent, subacute pain in the lower third of the right thigh. About the middle of February 1934 she began to notice an occasional pain. The pain was not brought on by activity. There was no radiation of the pain and no regularity of occurrence. Toward the last of March a bulging became apparent. This gradually increased in size, and she continued to have pain. There was no disability of the right lower extremity. There was no history of trauma.

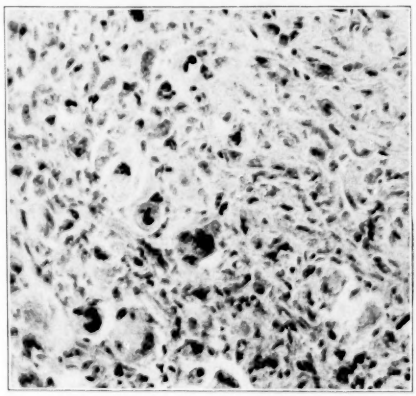

Fig. 6 (case 2).—Section from tumor, showing irregularity in size and shape of cells, together with syncytial giant cells. Stroma is scanty. Numerous mitotic figures. Osteogenic sarcoma.

Examination.—May 20, the temperature was 96.3 F., the pulse 100, and the respiration rate 20. The patient was well developed and fairly well nourished in appearance. Only the right thigh was of interest. There was an early spindle-like enlargement of the anteromedial aspect of the thigh at the junction of the middle and lower thirds, visible on inspection. The mass was not sensitive on manipulation. Movements at the knee joint were not reduced in range. The mass was felt to be of indurative hardness and could be palpated on the anteromedial surface of the lower third of the right femur, encircling the bone throughout half of its circumference. It was not movable but firmly attached to the bone. The crural nodes were not palpable.

The blood Wassermann and Kahn tests were negative. Chemical analysis of the blood showed: red blood cells, 3,920,000; hemoglobin, 65 per cent; white blood cells, 9,400: neutrophils, 74 per cent; lymphocytes, 26 per cent; a slight increase in thrombocytes; blood typing, Moss II. Analysis of the urine showed 2 or 3 erythrocytes and 2 or 3 pus cells to a high power field.

Roentgen examination of the right thigh, April 14, revealed an area of osteonecrosis involving about 7.5 cm. of the lower third of the right femur (fig. 7). Greater destruction was noted along the anterior cortex than posteriorly, with some elevation of the overlying periosteum. There was a mass in the soft structures about the area of bone destruction, lying beneath the muscles.

Examination of the chest revealed no metastatic nodules.

The diagnosis was probable osteogenic sarcoma, but the condition had the appearance of syphilitic osteomyelitis.

Microscopic examination of a piece of tissue, April 25, revealed that it was largely fibrous and contained many fibroblasts. There were only a few blood vessels. There was considerable leukocytic infiltration.

The impression was that there was inflammatory change and that the growth was nonmalignant.

Because of these reports, amputation was delayed for about one month. Operation was not scheduled until serial roentgenograms had offered further support of the probability of a malignant condition.

May 5 there was an extension of bone destruction longitudinally in the shaft and no new bone production.

May 15 there was no involvement of the long bones or chest.

Fig. 7 (case 3).—Anteroposterior and lateral views of the lower right femur, showing bone necrosis and encircling soft tissue tumor beneath the muscles.

May 18, progressive destruction was present along the shaft of the femur and no bone regeneration. The dense tumor still was confined beneath the muscles, surrounding the area of osteonecrosis. It appeared to arise from the outer layer of the periosteum (fig. 8).

Amputation was carried out, May 23. It was decided not to attempt enucleation at the hip joint because of the girl's general physical state. A high upper third amputation of the thigh was done. The patient's condition toward the end of the operation was unsatisfactory, subcutaneous epinephrine and intravenous saline solution being administered to combat circulatory collapse. A blood transfusion was given after the amputation.

Pathologic examination of the lower two thirds of the right femur revealed that 9 cm. above the condyles there was a firm, spindle-shaped tumor mass lying in direct proximity to the bone shaft and completely surrounding it. The mass measured 9 by 2.5 cm. There was a necrotic cavity in the shaft of the bone, 4 cm. in length and directly beneath the tumor. The bone marrow was soft and necrotic for a distance of 4 cm. below and above the cavity. The latter was filled with dark bloody fluid and soft necrotic material.

On microscopic examination the extracortical tumor was reported fibrosarcoma, with a rather low grade of malignancy. Figure 9 is a section from the medullary portion of the tumor.

Progress Notes.—The postoperative course was uneventful, after a rather persistent tachycardia for a time. On gradually regaining strength she was able to leave the hospital and return home. When seen two months later she was in very good health, had maintained her average weight and was without discoverable metastasis.

Two months later, however, the patient reported for examination, complaining of persistent chest pain, a harassing, brassy cough and weight loss, and, on roentgen examination, multiple metastatic nodules were found widely distributed in the lung fields. The patient died, Jan. 29, 1935.

COMMENT

1. These cases strongly support the hypothesis of a genetic origin or diathesis in the development of malignant tumors.[2] It would appear that a spontaneous susceptibility to autonymous cell growth was resident in the osseous systems of these individuals and perhaps localized to it. Further, it is to be noted that three different major long bones were the sites of origin of the tumors. The appearance of all three sarcomas in a right extremity is perhaps fortuitous, rather than dependent on dextrolateral segregation of the "malignant factor" during oval division.

2. The contemporary occurrence of the tumors, moreover, suggests the presence of some adjuvant, extraneous factor or factors.

Trauma.—Taken as a group, these cases indicate that injury was never the primary exciting cause but that its rôle was definitely one of aggravation and acceleration of already existent sarcoma. In case 3 there is no history of trauma. In each of the other cases it is to be noted that there was a rapidly appearing tumor at the site of injury. But it must be borne in mind that patient 1 had complained of pain for four months prior to the blow he suffered—pain of such consequence as to make him quit his job—and that patient 2, although asserting that there were no symptoms of any character before her accident, seems definitely to have sustained a pathologic fracture, indicating the silent growth of

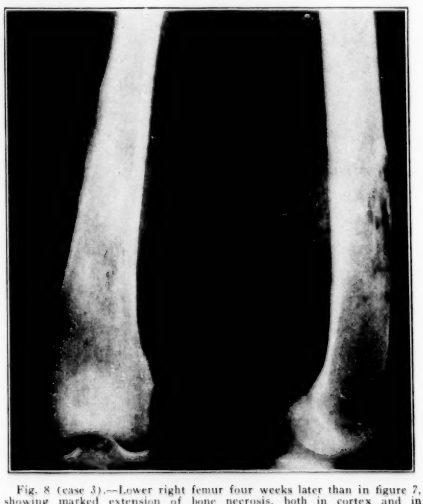

Fig. 8 (case 3).—Lower right femur four weeks later than in figure 7, showing marked extension of bone necrosis, both in cortex and in medulla of the femur, and increase in size of surrounding tumor.

intramedullary sarcoma (fig. 5). Our belief that the fracture did not primarily excite malignant change is strengthened by the fact that patient 2 had broken her right clavicle three or four years earlier, when she had fallen down a cliff, and normal healing had resulted (fig. 5). In this connection it is of interest to note that in April 1934, while his brother and sisters were suffering from sarcoma, William T. Jr., aged 6 years, sustained a fracture of the left clavicle. Follow-up

roentgen examination showed normal callus formation, with no other abnormalities involving the bones of the shoulder. Healing was rapid and to date has been uncomplicated.

(These cases are not to be confused with those in the multiple fracture family reported by Werner.[3] There is nothing here to indicate chronic bone disease as a ground for the superimposition of sarcoma.)

In case 3, of course, the degree of influence of surgical insult at biopsy cannot be estimated, but radiologic study (figs. 7 and 8) showed rapid extension of bone destruction subsequent to the diagnostic operation.

Infection.— Unless the concomitance of the three cases can be assigned to chance, the instance offers the possibility of a specific infectious agent in the outset. The constitutional symptoms were not, however, suggestive of an infectious process. Culture and smears of bone marrow at the time of amputation in case 3 revealed no organisms.

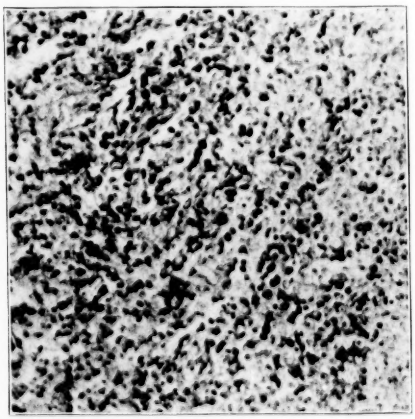

Fig. 9 (case 3).—Section from tumor, showing round cells, fairly uniform in size, with rather pyknotic nuclei. The stroma is scanty. Osteogenic sarcoma.

Bone Growth.—Kolodny's[4] conclusion from statistics of the Registry of Bone Sarcoma that energetic bone growth, with its underlying endocrine influence, is a signal factor in the etiology of osteogenic sarcoma can well be applied here and must be considered in analysis.

Dietary.—That there may be some dietary deficiency factor bearing a primary or aggravating rôle in the development of sarcoma is suggested by the environment in which this family lived. The nine persons, living in a bare, three-room shack, were receiving meager support through federal relief. Although grossly they appeared to be well nourished, it is plausible to assume that their economic status failed to provide a balanced fare.

26 Linden Avenue, N.E.

3. Werner, R.: Multiple Occurrence of Tendency to Bone Fractures and Sarcoma Development in Family: Instance, Ztschr. f. Krebsforsch. **32**: 40-42, 1930.

4. Kolodny, Anatole: Bone Sarcoma; The Primary Malignant Tumors of Bone and the Giant Cell Tumor, Surg., Gynec. & Obst. **44**: 1 (April, pt. 2) 1927.

OCCLUSION OF THE POSTERIOR INFERIOR CEREBELLAR ARTERY IN CARDIOVASCULAR DISEASE

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M. D. FRIEDMAN, M.D.
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Cerebral vascular accidents may occur in any part of the brain, but it is common knowledge that the great majority of such accidents involve either the motor cortex or the internal capsule and produce here the classic picture in which the obvious hemiplegia plays the most prominent part. The two conceptions "stroke" and hemiplegia are therefore closely associated in the minds of most medical men. There are, of course, apoplexies in other localities of the brain, apoplexies without hemiplegia but with otherwise characteristic symptom complexes. It is our purpose in this communication to point out such a locality in the brain, where vascular accidents occur much more frequently than is generally believed. We shall further point out that they can be readily recognized if one becomes familiar with their symptomatology and that their recognition is of far more than academic interest because of important clinical and prognostic peculiarities that they entail. The locality to which we refer is the lateral portion of the medulla, and the pathologic lesion in these cases is occlusion of the posterior inferior cerebellar artery.

A brief review of the anatomy and the circulation of the medulla, with a consideration of the structures involved, will aid greatly in understanding the clinical picture.

The medulla is supplied by branches from the vertebral, anterior spinal, basilar and posterior inferior cerebellar arteries. These vessels send paramedian branches, which irrigate the pyramids and midline structures. They send also long and short circumferential branches into the substance of the medulla. A branch of the posterior inferior cerebellar artery supplies that sector which extends roughly from the outer border of the olive to the restiform body. It is an interference with the functions of the structures lying in this sector that gives the signs and symptoms of the lateral medullary syndrome. Thus one has:

1. Involvement of the fibers from the vestibular nucleus resulting in dizziness, nystagmus, falling reactions and the like. The cochlear portion is for anatomic reasons rarely involved, but if it is affected one gets only partial deafness and tinnitus.

2. The restiform body, which may be affected, causing some hemiataxia.

3. Involvement of the ninth nerve, giving disturbance of sensation in the pharynx and soft palate and disturbance of taste in the posterior third of the tongue.

4. Involvement of the tenth nerve, causing (*a*) disturbance of movement of the soft palate and interference with the function of the pharyngeal contrictors, and (*b*) paralysis of the vocal cord on the side of the lesion.

5. Involvement of the nucleus and descending root of the fifth nerve. This results in a hypesthesia of the face, cornea and mucous membrane of the nose on the homolateral side.

6. The spinothalamic tract, which is practically always caught and produces a contralateral hypalgesia, perhaps the most constant feature of the syndrome.

7. In a certain percentage of cases the catching of the oculopupillary fibers as they pass through this region of the medulla, producing a Horner's syndrome on the side of the lesion.

105
935

It is only fair to mention that the French writers, especially Foix and his associates, differ somewhat from this view, as they divide the medullary syndrome into an upper and a lower one. They state that the upper syndrome is due to an occlusion of the arteria fossae lateralis bulbi, a branch of the basilar artery, and that the lower syndrome alone is due to an occlusion of the posterior inferior cerebellar artery, another branch of the basilar artery. Most references in the literature, however, disagree with the French view and still hold to the older conception, which was first propounded by Wallenberg[1] and which represents the view most widely accepted today.

CLINICAL PICTURE

In unfolding a clinical picture produced by occlusion of the posterior inferior cerebellar artery, it must be emphasized right at the outset that, in contradistinction to the classic apoplexy, the attack is practically never ushered in with unconsciousness. In none of our cases did unconsciousness occur during the attack. The patient avers that something has happened to him and he may feel quite distressed. Yet the examiner is often not much impressed by the vague complaints and may attribute these to the underlying ailment or to a neurotic disturbance so frequently superimposed on organic disease. Such a fateful mistake is easily explained by the fact that one-sided lesions of the medullary structures involved cause so few and such equivocal disturbances in function that only a most minute examination will detect them. It is common knowledge that a one-sided paresis of the soft palate, the pharynx or the larynx produces very little disturbance to the patient. The larynx, unfortunately, is rarely examined by the internist or neurologist unless a definite complaint is registered by the patient, and nystagmus is, for some reason or other, not given the consideration that it deserves.

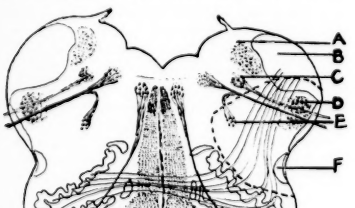

Fig. 1.—Diagrammatic sketch of the medulla, modified from Wilson, demonstrating the area in the lateral corner of the medulla that is involved by occlusion of the posterior inferior cerebellar artery: *A*, vestibular nucleus; *B*, restiform body; *C*, nucleus of the ninth nerve; *D*, descending root of the fifth nerve; *E*, motor nucleus of the tenth nerve; *F*, spinothalamic tract.

In other cases, again, the onset of the attack is more stormy or the emotional make-up of the patient less susceptible to neurotic disorders, and then the physician is strongly impressed by the organic nature of what has happened to the patient. The actual sequence of events in the vascular accidents under discussion is as follows: A patient having been treated for a cardiovascular condition or in whom such a condition has been anamnestically established suddenly develops Ménière's syndrome. His trouble is usually ushered in by a more or less severe dizziness accompanied by vomiting. These phenomena dominate the scene for a day or two. Then other symptoms gradually begin to make their appearance, such as difficulty in swallowing, some disturbance in articulation or perhaps some sensory disturbances. Again it is not these subjective symptoms but the objective signs always accompanying the former that will disclose the real situation.

The clinician who suspects the real significance of the Ménière episode will not have to wait for the appearance of these symptoms but will be able to observe from the beginning certain objective signs that will at once point the way to a correct diagnosis. Of these objective signs the most important one from a diagnostic point of view is the nystagmus. The nystagmus is so valuable a sign because it can be readily visualized, because it is beyond any doubt an objective sign and because it will lead one on to the right track of clinical interpretation and localization.

Fig. 2 (case 2).—Gross appearance of the medulla, with a magnification of 1½ diameters, showing the destruction in the lateral corner of the medulla.

Next in diagnostic importance is the paralysis of one vocal cord. This is almost always present, although, as mentioned before, it will rarely betray itself by any appreciable impairment of function. It must and should be looked for. It will, at least in some cases, clinch the diagnosis and point to the exact site of the accident. The other signs, as enumerated in the anatomic introduction, may vary as to their number and intensity and help merely to confirm the diagnosis. Among the latter there is one very significant sign, particularly when the nystagmus and vocal cord paralysis are not so manifest. This is a crossed sensory disturbance involving the face on the side of the lesion and the rest of the body on the opposite side. The anatomic explanation for this phenomenon is found in the involvement of the nucleus and descending root of the fifth nerve, fibers of which have not yet crossed, and the spinothalamic tract, the component fibers of which have all crossed in the cord. This also explains the fact that the sensory involvement is limited to pain and temperature. As a rule, these sensory disturbances are not complete. They may be limited to a homolateral corneal anesthesia and to islands of partial anesthesia on the other side of the body. These disturbances, however, are not as obvious as the nystagmus or as striking as the vocal cord paralysis. They must be painstakingly searched for to be elicited.

All these signs and particularly the symptoms diminish gradually in their intensity, but some traces of them will persist indefinitely. It is one of the distinguishing features of this vascular accident as contrasted with the classic apoplexy that the prognosis is definitely more favorable. There are occasional exceptions with a fatal termination. These occur when the lesion is caused by hemorrhage that spreads beyond the bounds of this sector, causing more extensive medullary damage—always a most serious disorder.

DIFFERENTIAL DIAGNOSIS

A differential diagnosis will only rarely come in question, but there are other lesions which can affect this region and may occasionally simulate its vascular etiol-

1. Wallenberg: Arch. f. Psychiat. **34**: 923, 1901.

ogy. Thus multiple sclerosis may begin in this region and cause confusion in diagnosis. With multiple sclerosis, however, other signs referable chiefly to the pyramidal tract or other characteristic regions will soon manifest themselves. Of course the acuteness of the onset is not so striking in multiple sclerosis.

Secondly, syringobulbia shows a predilection for this region, and it is important to point out a fact not generally known: that syringobulbia may occur in apoplectiform attacks. These attacks are a form of progression of the disease, each one adding to the extent of the involvement. Furthermore, syringobulbia is as a rule associated with some syringomyelic cavities in the cord, a pathologic process that will find expression in a more varied symptomatology.

Thirdly we would particularly call attention to the bulbar type of poliencephalitis, which may come on with apoplectiform suddenness, involving also one side of the medulla. Here the usual elevation of temperature, characteristic changes of the spinal fluid and perhaps also some spinal cord involvement will readily help one out of the dilemma.

Of other disorders that may occur in this locality we believe no mention need be made.

The following case reports, two of them with autopsy material, will serve to illustrate this syndrome:

CASE 1.—B. K., a man, aged 67, admitted to the hospital, Dec. 15, 1932, had been subject to attacks of angina pectoris for several months. One morning a few days prior to admission he awoke with an attack that was diagnosed as a mild

Fig. 3 (case 2).—Recent encephalomalacia and hemorrhage in the lateral corner; slightly reduced from a photomicrograph with a magnification of 5 diameters.

coronary occlusion. After prompt medical aid he felt much better but was advised by his physician to remain in bed. He felt so well, however, that he got up and went to work the same afternoon.

At noon that day, while he was at lunch, he suddenly felt dizzy and faint and had to be taken home to bed. He vomited repeatedly, had difficulty in speaking and complained of trouble in his throat. The next day he was unable to swallow and his physician thought that a fish bone might have become lodged in his throat at lunch the previous day. He was taken to the hospital for roentgen examination of the throat and esophagus. During the examination it was found that the barium sulphate stuck in the pharynx and did not move beyond it.

A neurologic examination then revealed the following:

1. Rotary nystagmus of the first degree was found, which affected each side but was more marked to the left.

2. Marked hypesthesia of the left side of the face was present with an absence of the left corneal reflex.

3. The soft palate on innervation was pulled to the right, the so-called curtain movement.

4. The sensation of the soft palate and pharynx on the left side was gone, so that the examiner's finger, when introduced into the patient's throat on this side, fell into the depth as if into a hole, without meeting any resistance.

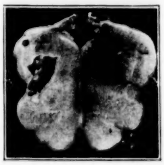

Fig. 4 (case 3).—Gross appearance of the defect in the lateral corner of the medulla (magnification 1½).

5. Several areas of diminished sensitivity to pain and temperature were found on the right side of the body.

The diagnosis was occlusion of the left posterior inferior cerebellar artery, probably as the result of an embolus, which originated from a mural thrombus in the left ventricle of the heart.

CASE 2.—J. P. N., a man, aged 52, was a private patient of an outside physician and the record is incomplete. However, the patient died while in the hospital and an autopsy was held here. It is because of the instructive autopsy material that we decided to include the case with our presentation.

The patient was admitted first, Feb. 26, 1929, because of high grade cardiovascular disease with a recent onset of cardiac failure. He showed no neurologic signs or symptoms at the time of his first admission. Abnormalities then were confined to the evidences of cardiac failure. He showed a moderate hypertension (156 systolic, 106 diastolic) and an enlarged heart with a systolic murmur at the apex. At the time of the first admission he was kept in the hospital for two weeks, treated for his failure and discharged March 12 as improved. A week later he was readmitted because of the sudden appearance of evidences of a cerebral vascular accident. Severe headache developed, and then he suddenly found that he was unable to swallow and noticed some difficulty in speech. The record discloses no further details. The examination as recorded revealed (1) right facial weakness, (2) moderate deafness, (3) slow pulse (about 60), (5) hoarseness and (5) difficulty in swallowing.

His condition became progressively worse and he died, March 28, one week after the vascular accident.

The laboratory work and serologic reaction in this case were negative.

Although the clinical summary is meager, we think the pathologic demonstration will prove of considerable interest. The gross specimens and the slides showed the sharp localization of the lesion to the lateral portion of the medulla. We are sure that a careful neurologic examination would have revealed the syndrome as we have previously outlined it.

CASE 3.—B. T., a woman, aged 31, married, admitted April 9, 1933, complained that on the previous night she awoke suddenly with a feeling of choking, breathlessness, inability to swallow, numbness on the left side of the body and a tendency to fall toward the right side. The patient had a developed mitral stenosis. She had been in the hospital only a month prior to this admission for a therapeutic abortion and sterilization. Following this operative procedure a sudden cardiac failure developed with pulmonary edema. She was treated for this condition, remained in the hospital for about three weeks, improved quite rapidly and at the time of her first discharge felt entirely well. She remained well then until the episode mentioned.

She was examined by us the day after her second admission. The patient was lying in bed with her eyes closed, because she

stated, she got very dizzy when she opened her eyes. The following observations were made:

Examination of the cranial nerves revealed (*a*) Horner's syndrome on the right, (*b*) hypesthesia of the right cornea, (*c*) horizontal nystagmus of the first degree to the left and first and second degrees to the right, (*d*) suggestion of a facial weakness on the right, side of the central type, and (*e*) palatal weakness on the right side and a marked hypesthesia of the right soft palate and pharynx.

The upper extremities were essentially normal.

The abdominal reflexes were weak on the right and active on the left.

The lower extremities were essentially normal.

Fig. 5 (case 3).—Old encephalomalacia and defect in the tissue of the lateral corner of the medulla, × 5.

Sensory examination showed a hypesthesia for pain and thermal sense on the entire left side of body, including the trunk and the extremities, and a hypesthesia of the face on the right side.

We felt that we were dealing here with a cerebral accident, and since the patient had a mitral stenosis with fibrillation the most likely cause was an embolus. The neurologic examination revealed involvement of the fifth, seventh, eighth, ninth and tenth nerves on the right side and a hemihypesthesia of the left side of the body. This would localize the lesion in the right lateral portion of the medulla. Thus the diagnosis was occlusion of the right posterior inferior cerebellar artery, most likely as a result of embolism.

Except for the cardiac lesion, the rest of the examination was negative. The laboratory work and serologic reactions were all essentially negative. She improved remarkably from day to day and was discharged at the end of two weeks, feeling very much better.

The patient was readmitted July 18, 1934, fourteen months after her attack of occlusion of the posterior inferior cerebellar artery, with a severe degree of cardiac failure and a recurrent rheumatic fever.

She was in the hospital for more than four weeks and her condition grew worse despite all treatment.

Neurologic examination showed that the nystagmus and the sensory changes were just as marked as they were at the time of the cerebral accident but that the other signs had cleared up.

The patient died, August 23, with acute pulmonary edema and infarction of the right lung. In addition to the usual changes resulting from repeated rheumatic attacks there was found in the medulla the precise lesion which was clinically postulated some fourteen months before.

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AIR IN THE BILE PASSAGES

A REVIEW AND REPORT OF A CASE

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AND
WILLIAM L. WOLFSON, M.D.
BROOKLYN

Biliary fistula into the intestinal canal usually results from the combination of infection and calculi in the biliary passages. Less frequently it follows a malignant condition of the gallbladder. Seldom does it develop from a perforating duodenal ulcer.

With all intra-abdominal inflammatory processes, an attempt is made by the adjacent viscera to wall off the offending structure. When suppuration of the biliary tracts occurs, adhesions form, and the gallbladder or its ducts may become agglutinated to proximate organs; i. e., duodenum, colon, stomach. As a consequence of constant pressure of calculi and advancing necrosis of the wall of the gallbladder, perforation into an adherent viscus may ensue. Internal biliary fistulas have frequently been associated with the presence of stones. Judd and Burden [1] found them to be present in the gallbladder or its ducts in 121 of their 153 cases. In 1885 Murchison [2] reported carcinoma of the gall-

Fig. 1.—Barium enema. Tab of barium is visible in the lumen of an air-containing viscus. The barium is also seen in the fistulous tract.

bladder to have been present in six out of nine cases of fistula between the gallbladder and the colon. Carman and Miller [3] cited an instance of a carcinoma of the pylorus of the stomach that perforated into the gallbladder with the formation of a fistula. Kantor and

From the Surgical Service of William L. Wolfson, M.D., Jewish Hospital of Brooklyn.

1. Judd, E. S., and Burden, V. G.: Ann. Surg. **81**:305-312 (Jan.) 1925.
2. Murchison, C.: Clinical Lecture on Diseases of Liver, 1885, p. 569 (edited by Brunton, T. Lauder).
3. Carman, R. D., and Miller, Albert: Roentgen Diagnosis of Diseases of the Alimentary Canal, Philadelphia, W. B. Saunders Company, 1917, p. 369.

Jaffin [4] and Lönnerblad [5] recorded cases of perforation of duodenal ulcer into the gallbladder or its ducts. The formation of a self made anastomosis between the gallsac or its ducts to the intestinal tract is not uncommon.

In 1909, Robson [6] demonstrated at operation a calculus impacted in a freshly forming fistula between the gallbladder and the colon. Judd and Burden referred in their series to eleven cases in which a stone was found in transit in the lumen of the fistula. Lönnerblad described a case of cholecyst-intestinal

Fig. 2.—Y-shaped gas shadow outlining two hepatic ducts and the common bile duct.

fistula without any history of abdominal colic. He indicated two similar instances, one reported by von Korte and the other by Graeberger.[7] Here it must be assumed that, owing to an eroding stone, perforation took place slowly and that the inflammatory reaction was minimal. This is extremely rare.

Of 10,866 autopsies reported by Roth, Schroeder and Schloth,[8] only forty-three fistulas between the gallbladder and the intestinal canal were found. Naunyn [9] and Courvoisier collected 384 cases of biliary fistulas, of which 184 were of the cholecystogastro-enterocolonic type. Judd and Burden at the Mayo Clinic reported a large group of cases of internal biliary fistulas disclosed at operation. In these series, the most common by far were the cholecystoduodenal fistulas. Then, next in order of frequency were the cholecystocolonic, cholecystogastric and, least frequent, the cholecystoduodenocolonic fistulas.

At operation or postmortem examination, the gallbladder is usually small and fibrotic. Stones are generally present. Often the common duct is greatly dilated. The liver may show cirrhotic changes or a thickened capsule.

4. Kantor, J. L., and Jaffin, A. E.: Radiology **10:** 10 (Jan.) 1928.
5. Lönnerblad, Lars: Acta radiol. **13:** 551, 1932.
6. Robson, A. W. M.: Brit. M. J. **1:** 1050-1054 (May 1) 1909; Diseases of the Gallbladder and Bile Ducts, Including Gallstones, ed. 3, New York, William Wood & Co., 1904, p. 133.
7. Graeberger, Gösta: Acta radiol. **12:** 164, 1931.
8. Roth, Schroeder and Schloth, cited by Robson.[6]
9. Naunyn, B. A.: Treatise on Cholelithiasis, 1896, p. 143; trans. by A. E. Garrod.

The impaction of a stone in the duodenum or small intestine, complicating the perforation of the gallbladder into the digestive tract, may result in intestinal obstruction. Stones that have perforated into the large bowel rarely produce obstruction unless the stone is enormous or unless conglomerated calculi have formed a large mass. Retrograde infection from colon fistulas has resulted in abscess formation of the liver.[10]

Although the literature is replete with references to internal biliary fistulas, only forty-three cases have been diagnosed preoperatively. Masciottra and Etcheverry [11] reported one case. Lönnerblad described two personally observed cases and cited forty collected from the records. Judd and Burden reported that in their series of biliary fistulas, the diagnosis was made but twice. Of the forty-three cases diagnosed, six were cholecystocolonic fistulas (Reich,[12] Lönnerblad, Fuller,[13] Judd and Burden (two cases), and Schinz [14]). The cases of Judd and Burden and of Schinz were proved. We wish to add our case to those previously reported as diagnosed before operation and confirmed at operation.

Of great interest in the case which we present is the display of gas shadows in the bile passages. This has been observed only six times in spontaneous internal fistulas (von Friederich,[15] Öhnell and Lindblom,[16] Graeberger, Busi,[17] Alberti [18] and Beutel [19]) and three

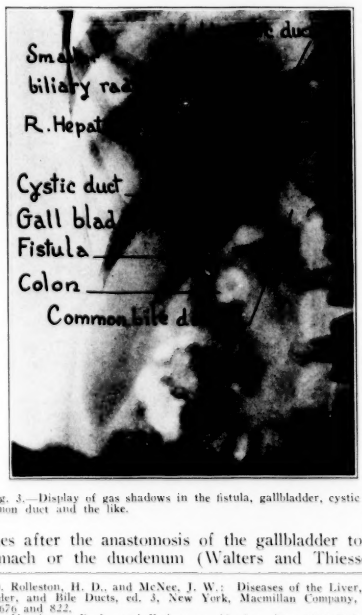

Fig. 3.—Display of gas shadows in the fistula, gallbladder, cystic duct, common duct and the like.

times after the anastomosis of the gallbladder to the stomach or the duodenum (Walters and Thiessen,[20]

10. Rolleston, H. D., and McNee, J. W.: Diseases of the Liver, Gallbladder, and Bile Ducts, ed. 3, New York, Macmillan Company, 1929, pp. 676 and 822.
11. Masciottra, R. L., and Etcheverry, M. A.: Rev. Med.-Quirug de pat. feminina **1:** 234, 1933; abstr. Int. Abstr. Surg., 1934, p. 126.
12. Reich, Leo: Fortschr. a. d. geb. d. Röntgenstrahlen **10:** 698, 1929.
13. Fuller, C. J.: Brit. M. J. **1:** 279 (Feb. 15) 1930.
14. Schinz, H. R.; Baensch, W., and Friedl, E.: Lehrbuch der Röntgendiagnostik, ed. 3, Leipzig, Georg Thieme **2:** 1440, 1932.
15. von Friederich, L.: Fortschr. a. d. geb. d. Röntgenstrahlen **39:** 616, 1929.
16. Öhnell, Harold, and Lindblom, K.: Acta radiol. **10:** 121, 1929.
17. Busi, Aristide: Radiol. med. **8:** 122, 1921.
18. Alberti: Radiol. med. **14:** 729 (Sept.) 1927.
19. Beutel, A.: Roentgenpraxis **4:** 326 (April) 1932.
20. Walters, Waltman, and Thiessen, N. W.: Proc. Staff Meet., Mayo Clin. **9:** 772 (Dec. 14) 1934.

Mallet-Guy and Beaupère,[21] and Odischaria [22]). In von Friederich's case the actual spirals of the valves of Heister were perfectly outlined by gas. In our case, the colon, the fistula, the small gallbladder, the cystic duct, the dilated common duct and the hepatic ducts were air filled and clearly visualized.

REPORT OF CASE

History.—P. D., a housewife, aged 41, the mother of four children, entered the hospital, Dec. 10, 1934. After her last pregnancy eight years previously she suffered an attack of upper abdominal pain below the costal margin and slightly to the right of the midline. The pain was very sharp in character, radiated around the right costal margin to the back and to the right shoulder region. During the attack she was nauseated and vomited thick green material. Fever of unknown height occurred during the first three days. After three weeks of illness all symptoms suddenly subsided. No jaundice or chills were present.

For five years after the initial episode, attacks of distressing abdominal pain recurred. They were referred to the upper right quadrant and were prone to follow the ingestion of fatty or fried foods. During this time she was frequently constipated.

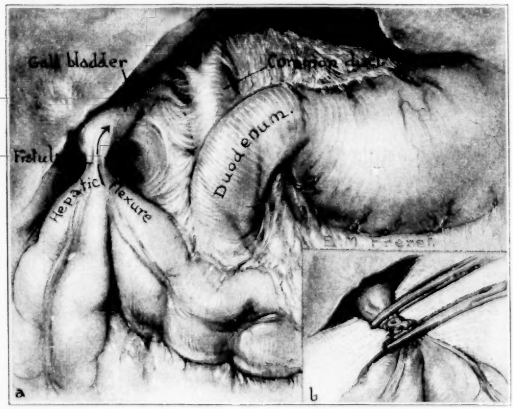

Fig. 4.—*a*, anastomosis of the fundus of the gallbladder to the colon. *b*, division of the union between clamps.

For the past two years she complained bitterly and persistently of the almost daily occurrence of cramps associated with diarrhea. The cramps began in the right hypogastrium, radiated downward and then became generalized in the abdomen. The stools contained mucus but no gross blood. Weakness had been progressive.

The past history other than that mentioned was immaterial.

Physical Examination.—The abdominal wall was moderately thick but was not distended. There was no enlargement of the liver or spleen. In the upper right quadrant there was noted deep elastic resistance and some tenderness. No other significant changes were present.

The temperature, pulse and respiration were normal. The blood pressure was 116 systolic, 88 diastolic.

Laboratory data revealed the following: The urine was normal. The red blood cell count was 3,600,000; hemoglobin estimation, 70 per cent. The white blood cell count was 6,750 with 80 per cent polymorphonuclear leukocytes, 19 per cent lymphocytes and 1 per cent mononuclear cells. Coagulation time was four minutes and bleeding time was two minutes. The blood chemistry was normal. The Wassermann and Kahn tests were negative.

Stool examination revealed no ova or parasites, and no blood. A small amount of undigested material and an occasional white blood cell was present. Some yeast cells were seen.

A barium enema revealed an abnormal oblique smudge-like shadow in the upper right quadrant above the hepatic flexure and toward the transverse colon (fig. 1). A trickle of barium had apparently passed out of the colon into a hollow structure filled with air lying externally to and diagonally above the hepatic flexure. The structure was interpreted as being the common bile duct.

The stomach and duodenum were roentgenographically normal. However, there was observed a Y-shaped air shadow with the lower vertical line lying slightly diagonally to the long axis of the abdomen and medially to the superior portion of the duodenum (fig. 2). Gas had evidently outlined the common bile duct and the two hepatic ducts which emptied into it.

A flat plate of the abdomen visualized air shadows which outlined the fistula leading from the colon into the gallbladder, the cystic duct, the dilated common duct, the hepatic ducts and smaller biliary radicles (fig. 3). A cholecystogram failed to outline the gallbladder (a usual occurrence in gallbladder fistula).

The preoperative diagnosis was cholecystocolonic fistula.

Operation.—There was observed a small gallbladder about 3 inches long and three-fourths inch wide, grayish, fibrotic, thick walled and noncalculous. The organ was adherent both to the liver, which was scarred and cirrhotic around the gallbladder area, and to the transvere colon, to which the fundus was joined. The left lobe of the liver was normal. The head of the pancreas was slightly thickened. The common duct was dilated 1½ inches in diameter. The appendix was moderately fibrosed.

After many dense adhesions had been cleared from the area of the hepatic flexure it was possible to view a union of the fundus of the gallbladder to the transverse colon (fig. 4*a*). This bridge was severed between clamps and an enterorrhaphy was done to close the defect (stoma opening) of the colon (fig. 4*b*). The fistulous opening was 0.5 cm. in diameter. A cholecystectomy was easily performed. The dilated common duct was investigated and found to be free from detritus. It was then drained with a large catheter. The appendix was removed.

The pathologic report was chronic ulcerative cholecystitis and chronic appendicitis.

Since her operation of three months ago, the patient has been absolutely symptom free for the first time in two years.

CONCLUSIONS

1. In a case of spontaneous cholecystocolonic fistula, roentgenographic studies demonstrated gas and barium shadows in the biliary passages.
2. Persistent cramps and diarrhea were outstanding and significant symptoms.
3. The diagnosis was made preoperatively and confirmed by operation.

3021 Avenue I.

21. Mallet-Guy and Beaupère: Arch. d. mal. de l'app. digestif **16**: 686 (June) 1926.
22. Odischaria, S.: Roentgenpraxis **1**: 809 (Nov. 1) 1929.

Abuse of Language Mechanism.—The language mechanism is, however, so easy for all to employ, words are so cheap, sentences are complete grammatical units, and hence a speaker or writer may meander along without end or aim in his recording of nonrelated word-complexes. The worst that can be said of them, apart from their futility, is that they are harmless so long as they do not lead to the acceptance of correlation between statements which are merely juxtaposed.—Bolton, J. S.: The Evolution of Mind, *Lancet* **1**:728 (March 30) 1935.

THE HAZARDS OF THE INDUCTION OF PNEUMOTHORAX

IN THE TREATMENT OF LOBAR PNEUMONIA

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AND
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Pneumothorax is being used in many hospitals as a therapeutic measure in lobar pneumonia. Conflicting reports concerning the efficacy of this procedure have appeared in the literature. Its proponents present dramatic though uncritical results that are apt to stimulate undue enthusiasm. It seems well at this time to put forward a word of caution. Pneumothorax may be a hazardous procedure, and at present insufficient data to recommend its use are available.

The lobar pneumonias are a group of diseases due to different organisms, which display more or less distinctive characteristics in respect to age incidence, course and prognosis, depending on the etiologic agent. The most important element determining the outcome in these diseases is the occurrence and degree of blood invasion. Pneumococcic pneumonias that do not become blood invaded have a mortality of 12 per cent or less; those blood invaded have a mortality of 25 per cent or more. In 139 nonbacteremic type I cases treated with serum on the first three days there were five deaths, a mortality of 3.6 per cent; in thirty-three blood-invaded cases the mortality was 33.3 per cent. Without serum, the lowest mortality reported in the literature for type I cases is 20 per cent. The various pneumococcus types have blood invasion rates and mortalities that closely approach one another but are different for each type. The experiments of Stillman [1] and of Tuttle and Cannon [2] showed that damage to the lung capillaries due to the character of the invading organisms was the determining factor in blood invasion. Spontaneous recovery from pneumonia is apparently due to the development of humoral immunity. Recovery may be therapeutically induced by the passive transfer of this humoral immunity when administered sufficiently early in cases for which an antiserum is available. Delay in administration of type I serum increases mortality, as shown in the accompanying table.

Results in Five Hundred and Thirty-Two Cases of Pneumonia Due to Pneumococcus Type I Treated with Serum (Adults)

Day of Disease Serum First Given	Total Cases			Bacteremic Cases		
	Cases	Deaths	Mortality, per Cent	Cases	Deaths	Mortality, per Cent
1.....	13	0		1	0	
2.....	53	3	5.7	14	3	21
3.....	73	8	10.9	12	4	33
4.....	86	12	11.7	23	9	39
5.....	91	17	18.6	30	13	43
6.....	80	15	18.7	23	11	48
7.....	51	14	27.4	16	9	56
8 and later.....	85	20	23.5	17	11	65
Total.....	532	89	16.7	136	60	44

From Littauer Pneumonia Research Fund of New York University and the Medical Service of Harlem Hospital and from the New York Hospital.

1. Stillman, E. G.: J. Exper. Med. **52**: 215 (Aug.) 1930; **38**: 117 (Aug.) 1923.

2. Tuttle, W. M., and Cannon, P. R.: J. Infect. Dis. **56**: 31-37 (Jan.) 1935.

MODE OF ACTION

Artificial pneumothorax has been proposed by its advocates as a natural surgical method of placing the lung at rest, some using for analogy the benefits accruing from splinting an infected hand to avoid spread and blood invasion. Although it is recognized that with increasing degrees of collapse there is a corresponding reduction in the blood volume flow throughout the collapsed lung and that it is probable that there is a reduction in the lymph drainage from the collapsed lung, yet despite the remarkable healing of tuberculous lungs incident to pneumothorax therapy and despite the long years of use we do not know what part these physiologic alterations play in the healing process.

LIMITATIONS AND HAZARDS

There are certain limitations and hazards involved in the use of pneumothorax in lobar pneumonia. It is apparently recommended only in the early cases. Later in the disease, when well established consolidation has occurred, pneumothorax cannot collapse the consolidated lung. Patients with bacteremia, either early or late in the disease, do not respond favorably. Collapse of uninvolved lung may aggravate the dyspnea in a patient whose demand for oxygen is already increased by reason of fever and the mixture of unoxidized with oxidized blood. No one can selectively collapse the involved lobe. It may remain uncollapsed though the normal lobe shrinks. The introduction of air into an inflamed pleural sac presents conditions favorable to the development of fluid that may become purulent. Separation of the pleural surfaces precludes the localization of empyema should it occur as a spontaneous complication. When administered sufficiently early, serum therapy for type I reduces the incidence of empyema, as is shown in figure 1. Experience thus far indicates that a surprisingly large number of cases

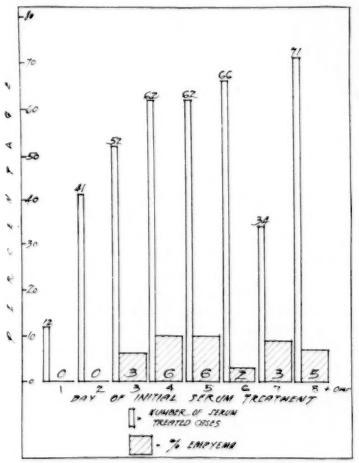

Fig. 1.—Frequency of empyema in serum treated pneumococcic pneumonia, type I. Influence of day of initial serum treatment. Figures above plain columns indicate the number of serum treated cases; figures in shaded columns, cases of empyema. Percentage frequency is indicated on ordinate.

present an adhesive pleurisy over the diseased lobe which precludes satisfactory collapse; when discovered, pneumothorax therapy should usually be abandoned. Traumatic rupture of the lung and air embolism are complications that have occurred. Infected mucus may be forced into the opposite lung, and in some cases rapid development of a contralateral pneumonia has occurred notwithstanding the induction of pneumothorax. Elderly people with reduced vital capacity or those with cardiovascular diseases have likewise not done well.

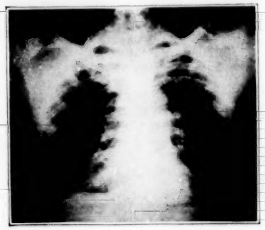

Fig. 2.—Condition on admission, Feb. 26, 1935, at 3 p. m., showing the involvement of the right lower lobe. The left lung field is clear.

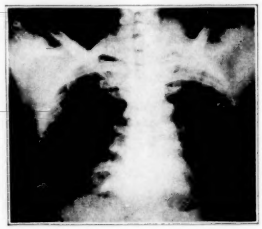

Fig. 3.—Condition after attempted induction of pneumothorax, showing clear lung field; 150 cc. of air introduced; no pressure reading obtained; no relief of pain.

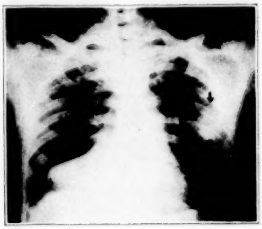

Fig. 4.—Appearance after the third refill and introduction of 950 cc. of air, with collapse of right lower lobe, which, however, is much more dense than in the previous film. Readings with left lateral recumbent posture: —4, +1½. There is commencing involvement of the upper portion of the left lower lobe, without hilar involvement. The pain was relieved after the introduction of 375 cc. of air, with a resultant pressure reading of —3, +1.

TECHNIC

Absence of standard technic shows that the therapy is still in the experimental stage. Certain workers have instituted only one, two or three treatments at intervals of twelve, twenty-four or forty-eight hours. Some employ frequent refills at intervals of from three to four hours to attain speedy collapse. Some use negative intrapleural pressures. Others desire that pressures be slightly positive.

To evaluate this therapeutic procedure, one must have frequent roentgen and accurate bacteriologic and serologic studies, and in view of the multiplicity of types a sufficient number of early cases to study. Early termination of a pneumonia and relief of clinical symptoms in any single case is not evidence of benefit achieved by the therapy. Some cases terminate early with no treatment, and to indicate a change in the usual duration it must be shown that this occurs regularly in a large series.

One of us has observed sixteen cases with five deaths (30 per cent) and three empyemas (18.7 per cent). The other has elected for treatment thirty cases from his service at Harlem Hospital.

The following complications and disadvantages have been noted with pneumothorax therapy of pneumonia:

1. Late invasion of the blood stream in spite of collapse.
2. Invasion of another lobe on the collapsed side.
3. Invasion of the contralateral side.
4. Empyema.
5. Induced rupture of the lung.
6. Extreme mediastinal shift, with death.
7. Harmful delay in application of serum therapy to suitable cases, as evidenced by unusual complications—nephritis.
8. Fatigue of patients by frequent manipulation and roentgen examinations.

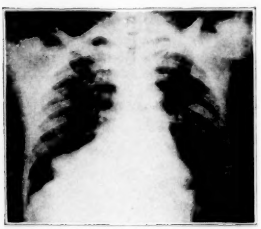

Fig. 5.—More extensive involvement of the upper portion of the left lower lobe at this time, with a selective collapse of the right lower lobe and failure of the right upper lobe to collapse completely. A small amount of fluid is seen in the right pleural cavity. Pressure readings at this time —4, +1.

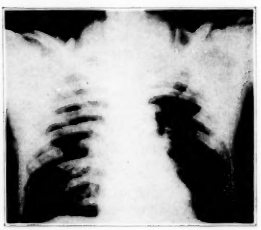

Fig. 6.—Reexpansion of the lung. Entire clearing of the left lower lobe with increased markings persisting in the right lower lobe, which had been collapsed.

CONCLUSIONS

There is insufficient evidence to warrant the use of artificial pneumothorax in the treatment of lobar pneumonia except in large hospitals amply equipped for bacteriologic, serologic and roentgenographic studies.

Pneumothorax therapy should not be employed by those inexperienced in the treatment of pneumonia or in the use of artificial pneumothorax.

The favorable results thus far recorded deal almost solely with patients in the early stages of the disease and without bacteremia, and in pneumococcus types that otherwise have a low death rate. Prevention of bacteremia in patients has not been demonstrated. The response of dogs to pneumococcus type III is quite different from the response of patients.

The use of artificial pneumothorax in pneumonia is still in the experimental stage. Until a sufficiently large number of cases have been studied, general practitioners are not justified in employing it.

At least all cases of type I, as well as those of type VII and early cases of type II, should receive serum. In them the hazard of pneumothorax appears unnecessary.

Even those advocating this therapy do not recommend it for patients with well established consolidation, patients with bilateral lesions and those appearing for treatment after the third day of the disease.

REPORT OF CASE

W. W., a Negro, aged 26, admitted at 12:45 p. m., Feb. 26, 1935, to Harlem Hospital, complained of midsternal pain, a cough and fever since February 24. At 8 p. m. on that day he had severe chest pain aggravated by difficulty in inspiration,

with the cough becoming worse. The following morning he had a chill and blood tinged sputum.

On admission he had moist râles throughout both lungs and diminished breath sounds at the right base, with dulness. The pulse was 136, the respirations were 44 and the temperature was 104 F. The white blood cell count was 26,400; polymorphonuclear leukocytes, 85 per cent. Figure 2 shows a consolidation in the lower portion of the right lower lobe; the remainder of the lung fields were clear. The sputum revealed pneumococcus type I.

At 3 p. m. a pneumothorax was performed with the administration of 150 cc. of air. A roentgenogram (fig. 3) taken after this pneumothorax showed a slight amount of air below the consolidated lung. At 8 p. m. the temperature and pulse fell, the pulse being 114, the temperature 100 F. and the respirations 36. At this time 375 cc. of air was administered. The pressure reading changed from minus 5 minus 1 to minus 3 plus 1 and there was considerable relief of pain. At 11:45 an additional 425 cc. of air was administered and the

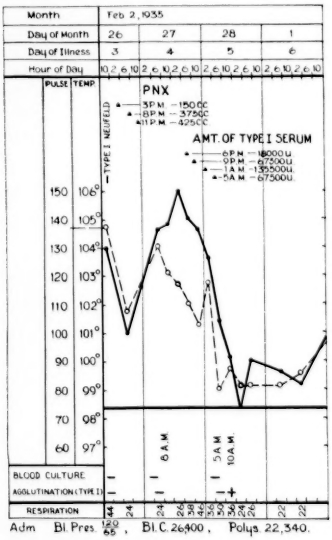

Fig. 7.—The temperature chart of patient W. W., suffering from pneumonia due to pneumococcus type I involving the right lower lobe. After good collapse of this lobe there was an involvement of the left lower lobe, commencing at its apex and with rise of temperature to 106 F. At this time large doses of pneumococcus type I serum were given, with fall of temperature and pulse to normal.

pressure readings were minus 4 plus 1½. During the night the temperature rose to 106 F. and the pulse, which had reached 130, was 118. Another roentgenogram, taken during the night, showed a well collapsed right lower lobe, a partially expanded right upper lobe and a definite involvement in the central portion of the left lung field. There were signs of consolidation in the upper portion of the left lower lobe.

On admission, studies of the agglutinins for type I, prior to the administration of specific serum for type I, had been negative. On the evening of the second day in the hospital and during the night, four doses of serum were given at the following times: 6:30 p. m., 10,000 units; 9:45 p. m., 67,500 units; 1 a. m., 135,000 units, and 5 a. m., 67,800 units.

The temperature and the pulse reached normal. Agglutinins were strongly evident in the blood stream. There was no significant rise of temperature until the eleventh day, when the patient had a mild serum sickness lasting three days. The patient was discharged cured on the fifteenth day with the lung fully expanded, though there was still some radiopacity at the site of the original pneumonia, which had been collapsed. The second invasion had entirely cleared.

Though it is possible that the invasion of the contralateral lung was the result of the collapse of the primary site, this is by no means established or urged. It is more probable that the second invasion developed as the result of the pneumococcic infection, which was unchecked by the induction of pneumothorax. Obviously the treatment of the opposite side by pneumothorax was impossible.

Without roentgen study of the progress of the infection and prompt recognition of an invasion of the contralateral side and typing, this patient would not have received the benefits of serum therapy. At least from eight to twenty-four hours would have been necessary to determine whether the blood culture was positive. The induction of pneumothorax in this instance was an unnecessary, costly and dangerous therapeutic interference, which was responsible for delay in administering specific therapy.

62 West Eighty-Seventh Street—470 Park Avenue.

Clinical Notes, Suggestions and New Instruments

MIGRATION OF NEEDLE INTO HEART THROUGH CHEST WALL: SURGICAL REMOVAL

ELECTROCARDIOGRAPHIC AND ROENTGENOGRAPHIC STUDIES

HAROLD A. GOLDBERGER, M.D., AND HAROLD E. CLARK, M.D.,
NEW YORK

This case is reported because of its unique character and its interesting electrocardiographic and roentgenographic records.

N. S., a man, aged 34, Puerto Rican, sign painter, was brought to the Metropolitan Hospital by ambulance, complaining of pain in the left side of the chest. He stated that he was sleeping in a bed placed directly below a pincushion suspended on the wall. He was aroused from sleep by a sharp pain in the anterior part of the left side of the chest. He said it felt as if a needle had stuck him. The pain increased in intensity and he called an ambulance.

On admission of the patient to the ward the pain had increased in severity and was exaggerated on deep breathing. He now complained of pain radiating to the tip of the left shoulder and designated the tip of the acromion process and the area covered by the supraclavicular fossa, in addition to the precordium, as the points of maximum pain.

The past and the family history were of no significance except for the fact that he had been admitted to the hospital on two previous occasions for acute alcoholism. At the time of the previous admissions no pathologic condition was found other than the acute alcoholism, no cardiac murmurs and no arrhythmia or abnormal changes in blood pressure.

On physical examination the patient was sitting up in bed, apparently in acute pain and slightly dyspneic. The pupils reacted to light and distance. No abnormal pulsations were present in the neck. Expansion of the two sides of the chest were equal. On the left anterior chest in the fourth interspace 1½ inches medial to the nipple line was a small red point about 1 mm. in diameter. This area was tender only on deep pressure. The lungs were resonant throughout and no râles were heard.

The border of the left ventricle was percussed for a distance of 8.5 cm. from the midline. The apical impulse was seen and felt in the fourth interspace, 8 cm. from the midline. A coarse thrill was palpated all over the precordium, maximal

From the Department of Surgery, Metropolitan Hospital, Service of Dr. Lucius Salisbury.

at a point 1 cm. medial to the site of the pin prick. On auscultation both heart sounds were obscured by a very loud, coarse, grating murmur, which reached maximal intensity during systole. The same ill defined noise was still further intensified with each respiration. All other physical manifestations were normal.

The temperature was 99.8 F.; the pulse was regular, was of good quality, was equal at the two wrists and maintained a rate of 92; respirations were slightly labored at a rate of 24; blood pressure was 108 systolic, 85 diastolic. Urinalysis showed a specific gravity of 1.034, a faint trace of albumin, absence of sugar, a moderate number of white cells and an occasional hyaline cast.

twelve hours after the operation the patient's respiration became labored and the pulse rapid and weak. Respirations were 36 per minute; the pulse was 160 and the blood pressure 80 systolic, 64 diastolic. Examination of the chest showed dulness and absent breath sounds at the left base. Examination with a portable x-ray apparatus showed fluid in the left side of the chest with shifting of the heart slightly to the right. There was no collapse of the upper left lung. Pleural puncture was done on the left side and 300 cc. of dark fluid blood was removed. In spite of supportive measures the patient's condition became rapidly worse; blood pressure was 60 systolic, 40 diastolic; the respiration rate 42 and the temperature 103. The patient died a short time later.

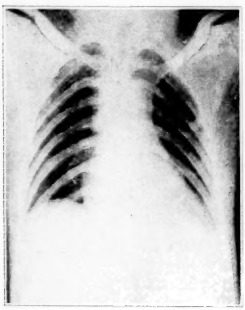

Fig. 1.—Routine chest plate showing the needle in the third interspace in the shadow made by the left ventricle.

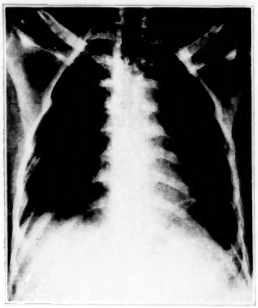

Fig. 2.—Exposure with the Bucky diaphragm showing the needle casting several shadows, owing to contraction of the left ventricle.

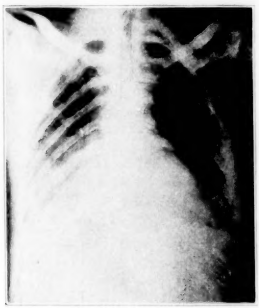

Fig. 3.—Chest plate taken after operation showing enlargement of the heart shadow (hemopericardium) and early pneumonia (atelectasis) at the right base.

A diagnosis of needle in the heart was made and the patient was taken to the x-ray room, where two exposures were made, one a routine chest plate and the other an exposure with the Bucky diaphragm (figs. 1 and 2).

With fluoroscopic examination the needle was visualized as a straight body about 2 inches long, moving with each systole in an oblique direction in a plane parallel to the third interspace, about an inch from the midline. The position thus found was mapped out on the chest with a skin pencil.

An electrocardiogram was taken (fig. 4) and the patient was prepared for the operating room. Nitrous oxide-oxygen-ether anesthesia was given. The operative procedure consisted of a vertical incision made from the third rib to the sixth rib in the left parasternal line with a horizontal incision along the fourth intercostal space for a distance of 7.5 cm. The fourth and fifth costal cartilages were incised and the intercostal muscles of the fourth interspace cut. The parietal pleura was opened and no free fluid was found but a few very fine threads of fibrin were seen to stretch with each heart movement between the parietal pleura and the pericardium. The pericardium was examined but not opened, and no evidence of hemorrhage was seen. The eye of the needle was located by palpation and then visualized in a plane parallel to the third interspace. The only portion seen was the eye proper, the remainder being buried in the left ventricle.

On close examination the needle was seen to have passed through the lower medial tip of the upper lobe of the left lung at the cardiac incisura, and at this point a small laceration one-half inch in length was seen in the lung tissue. The needle was withdrawn with a curved hemostat and found to be 1¾ inches long. At this time no bleeding in the heart tissue was observed, and it was quite interesting to note that the site of perforation was very close to the left coronary artery. The pleura was then closed and the intercostal muscle sutured approximating the costal cartilages. The skin was sutured with black silk.

The patient returned from the operating room to the ward with a pulse of 110 and in relatively good condition. The first ten hours after operation was uneventful, the patient resting comfortably under the usual postoperative sedation. About

Postmortem examination of the wound revealed the pericardial cavity full of dark red fluid blood. There was a deposit of fibrin over the heart and the puncture wound was clearly seen in the left ventricle.

SUMMARY

1. In the case here reported, roentgen examination confirmed the clinical diagnosis of a needle in the heart. An exposure made with the Bucky diaphragm showed the interesting phenomenon of a needle in the left ventricle, causing several shadows as a result of the contractions of the left ventricle.

2. An electrocardiogram showed the unusual phenomenon of an artificially produced coronary syndrome with high take-off of the T waves and inversion of the T wave in lead 3. The pain distribution was that of coronary artery disease and the site of the needle puncture in the left ventricle was close to the proximal portion of the left coronary artery.

3. Postoperative roentgenograms showed enlargement of the cardiac shadow with apparent fluid in the pericardial sac, clouding of the left base of the pulmonary field, and rapid reexpansion of a lung artificially collapsed during operation. The patient apparently died of secondary hemorrhage into the pericardial sac and subsequent cardiac tamponade.

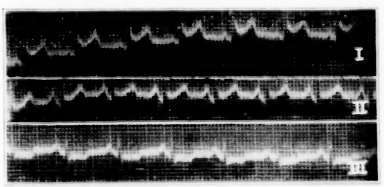

Fig. 4.—Electrocardiogram taken before operation showing a high take-off of the T wave in leads 1 and 2 and inversion of the T wave in lead 3. With a rate of 100 the PR interval was 0.12 second and the QRS interval was 0.4 second. The auricular and the ventricular rhythm were regular.

RETROPERITONEAL LIPOMYXOSARCOMA

CARRINGTON WILLIAMS, M.D., RICHMOND, VA.

There is no more innocent new growth than the ordinary pure lipoma. When, however, there are areas of fibrous or myxomatous tissue scattered throughout the tumor it has a tendency to recur and not infrequently to change from a benign to a malignant tumor. This malignant tumor is a sarcoma arising from the fibrous tissue, which recurs locally without metastasis to distant parts of the body.

The case reported is interesting first on account of the enormous size of the tumor, secondly because the original tumor appeared benign, and thirdly because of the changes in the character of the tumor and in its microscopic appearance at three different times during a period of six years.

REPORT OF CASE

Mrs. F. N. J., a widow, aged 65, who had enjoyed excellent health until the onset of her present trouble, entered St. Luke's Hospital June 22, 1925. Four years before she first noted a mass in the right side of the abdomen. There was no pain or other discomfort associated with this mass until, after two years, when it had grown quite large, there was discomfort from the weight of the tumor and attacks of weakness. At this time the tumor was explored (at another hospital) without the peritoneal cavity being opened. It was considered irremovable and tissue was taken for microscopic examination. This tissue was reported lipoma. Several roentgen treatments were given without effect on the tumor. She continued to lose body weight and strength, but the tumor continued to grow so that on admission to the McGuire Clinic her combined weight equaled her maximum weight. The atrophy of her body was due to the growth of the tumor, because her appetite was enormous.

Fig. 1.—Tumor removed at first operation. The kidney is seen in about the middle of the lower portion.

Physical examination, aside from the huge tumor, which filled the abdomen from ribs to pelvis, showed large tortuous veins over the anterior chest, a systolic mitral murmur with slight hypertrophy of the heart, and edema of both legs.

The blood Wassermann reaction was negative. Urinalyses were not significant. The blood showed red cells 2,760,000, hemoglobin 40 per cent (Dare), white blood cells 6,000, polymorphonuclear leukocytes 78 per cent, lymphocytes 20 per cent, large mononuclear leukocytes 1 per cent, and eosinophils 1 per cent. Four transfusions of whole blood were given, resulting in a rise of hemoglobin to 60 per cent. Her general condition was likewise improved.

Operation was performed, July 2, by Dr. Stuart McGuire and myself. A long incision was made over the tumor, which was exposed without the peritoneal cavity being entered. It separated from surrounding structures with remarkable ease until the whole mass was lifted upward, exposing the right renal vessels. The kidney was so deeply embedded in the tumor that it was removed in situ. During the dissection the peritoneal cavity was opened. The entire intestinal tract and peritoneal cavity were pushed well over to the left side. There was no tumor in the cavity. The peritoneum was closed. The tumor apparently had been completely removed. A large drain of gauze and rubber was inserted into the cavity and the wound closed around it. The tumor was made up of fat and fibrous tissue and weighed 51 pounds (23 Kg.) (fig. 1). Microscopically it was largely pure fat, but some areas showed a preponderance of fibrous tissue (fig. 2). The diagnosis was fibrolipoma (Dr. S. W. Budd). Convalescence was smooth, disturbed only by a moderate amount of bloody discharge. The lowest hemoglobin after operation was 46 per cent. The body weight three weeks after operation was 82 pounds (37 Kg.).

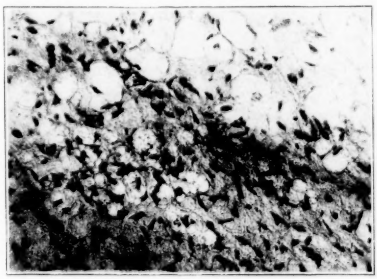

Fig. 2.—Section of the tumor removed at the first operation, showing fat and fibrous tissue.

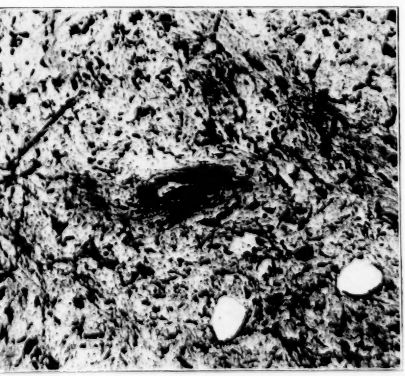

Fig. 3.—Section of the tumor removed at the second operation.

At this time the edema of the ankles had cleared up and the dilated veins on the anterior chest wall had disappeared. The patient gained rapidly in weight and strength and returned to her former strenuous activities. Six months after operation she weighed 122 pounds (55 Kg.) and after a year 132 pounds (60 Kg.).

She remained well and active for five years, when she noted a mass in the right flank. This increased in size, so she returned for treatment, June 2, 1930. At this time she was well nourished; the tumor mass was movable and lobulated

From the McGuire Clinic.

and aggregated about the size of an adult's head. The phenolsulphonphthalein excretion was 36 per cent in a two hour period; the nonprotein nitrogen of the blood was 36 mg. per hundred cubic centimeters and sugar, 110 mg. The hemoglobin was 70 per cent.

She was operated on, June 8. The peritoneal cavity was opened and innumerable pedunculated firm growths were found scattered throughout the right side of the cavity, varying in size from 1 to 10 cm. in diameter. The great omentum was heavily infiltrated and behind the peritoneum were two masses about 12 cm. in diameter. The omentum was resected, as many of the pedunculated growths were removed as was possible, and the large retroperitoneal masses were removed.

Some of these tumors were pure fat, others were myxomatous, and still others were more fibrous in character with areas showing definitely malignant change (fig. 3). The diagnosis was lipomyxosarcoma (Dr. Budd).

Following the operation the patient improved but was never well again. In January 1931 a recurrence of the growth was noted, but at this time she had had fever over a period of several weeks and was not able to return to the hospital until May. She now had lost weight and strength and appeared quite ill. There was a hard immovable mass in the right side of the abdomen, extending from the ribs to the pelvis. The

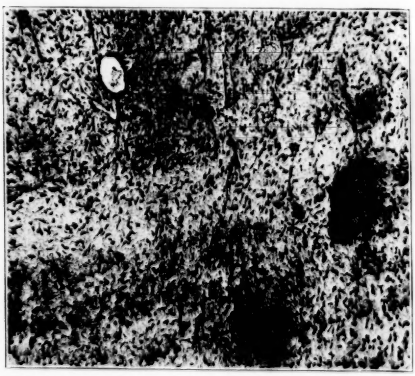

Fig. 4.—Section of the tumor removed at the third operation.

hemoglobin was 46 per cent, nonprotein nitrogen of the blood 36 mg., creatinine 1.8 mg., and sugar 125 mg. Phenolsulphonphthalein excretion was 22 per cent in a two hour period. At operation this mass, consisting of two large nodules measuring 12 and 20 cm. in diameter, was removed.

The microscopic examination by Dr. Budd revealed much the same picture as before, except that the areas of sarcoma now predominated and the cells were more highly malignant (fig. 4).

The patient made a good recovery from the operation but did not regain her former strength. Recurrence of the tumor was noted five months later and after another month she died, six years and four months after the removal of the tumor and ten years after it was first discovered.

COMMENT

The original biopsy specimen taken two years after discovery of the tumor showed a pure benign lipoma, but it was probable that the tumor at that time would have shown its fibrolipomatous character had it been completely removed. It was certainly originally benign. The tumor was exposed to x-radiation (amount not known) without any favorable influence; it is interesting to speculate on the question of actual harm that the rays may have done. These large retroperitoneal lipomas usually recur as sarcomas; it is therefore important to remove them early and completely. Since the recurrence is only local, repeated operations should be done as radically as circumstances permit. A review of the literature of recent years fails to reveal a report of such a tumor as large as this one. The first tumor weighed 51 pounds, the second and third tumors approximately 10 pounds each (4.5 Kg.), making a total tumor weight of about 70 pounds (31.8 Kg.).

THE TREATMENT OF CIRRHOSIS OF THE LIVER WITH INSULIN

JOHN E. WALKER, M.D., COLUMBUS, GA., AND WILEY D. WOOD, M.D., CAMP HILL, ALA.

Lepehne[1] states that the combination of a high carbohydrate diet and insulin is of value in the treatment of cirrhosis of the liver. McCabe and Hart[2] report five cases treated in this manner, with a definitely favorable influence on the disease.

We have used this method of treatment in one case. The result was gratifying. A report seems desirable in an effort to stimulate further trial of the method in this generally hopeless disease, particularly in ambulant patients not yet showing signs of hepatic toxemia.

A white man, aged 48, unmarried, a carpenter, complained of a swollen abdomen, March 1, 1933. His past health had always been good, except for malaria at the age of 18 years, and gonorrhea at the age of 34. He had never had a venereal sore, and stated that he did not use alcohol.

His present illness began fourteen months previously, when the abdomen began to swell. This swelling gradually increased and had prevented him from working for four months. Shortness of breath had not been present at the onset of illness but had gradually developed with the progressive abdominal enlargement.

The patient was emaciated. There was no evidence of cardiac enlargement or valvular disease. The abdomen was enormously distended, and there were enlarged tortuous veins over the lateral walls of the chest. There was moderate edema of the lower legs. The Wassermann reaction was negative.

Abdominal paracentesis was done, April 1. Three gallons of fluid with a specific gravity of 1.010 was removed. Altogether, he was tapped thirty-two times between April 1933 and May 1934. The intervals between tappings averaged twelve days. From 3 to 4 gallons of fluid was obtained at each tapping.

Soon after the patient was seen, he was given five intramuscular injections of salyrgan. He took 15 grains (1 Gm.) of theobromine sodiosalicylate three times a day for twenty-two days, beginning Sept. 26, 1933. Following this, he took daily 48 grains (3.1 Gm.) of ammonium nitrate for twelve days. Finally, he took 240 grains (15.5 Gm.) of urea three times a day for sixty-one days (until Jan. 1, 1934). None of these diuretics had any noticeable effect on the disease or on the frequency of tapping. Diuresis was evident, but the patient was apparently unable to control the ensuing thirst.

Dec. 15, 1933, as a result of the appearance of the article by McCabe and Hart,[2] insulin was begun, at first 5 units before the noon meal. By December 28 this had been increased to 10 units three times a day before meals, and on Jan. 12, 1934, a further increase to 15 units three times a day was made. The last dose was continued until March 28, thus making a period of slightly over three months during which he received insulin.

During the period of insulin administration the patient followed a diet containing approximately 400 Gm. of carbohydrate. Except for a preliminary period of instruction, he administered the insulin to himself. The danger of insulin reaction was strongly impressed on him, and he carried sugar with him at all times. No insulin reactions occurred.

Throughout the period of observation the patient was ambulant. He was his own judge in regard to when tapping was necessary, requesting it when the abdomen became so distended as to impede his movements. Edema of the feet also subsided after each tapping.

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2. McCabe, John, and Hart, J. F.: Treatment of Hepatic Cirrhosis with Insulin, New York State J. Med. **33**: 924 (Aug.) 1933.

In February there was a period of seventeen days during which tapping was unnecessary. This was the longest interval without tapping since the first paracentesis eleven months before. Following this, two more tappings were necessary, the last one on May 20.

The patient was last seen in December. There was no evidence of fluid in the abdomen. He had resumed his occupation as carpenter. A recent letter (Feb. 18, 1935) states that he is employed as the manager of a large farm and that he feels nearly as well as ever.

SUMMARY

A case of cirrhosis of the liver showed marked improvement on being treated with insulin and a high carbohydrate diet. Abdominal paracentesis, after having been necessary thirty-two times, was discontinued altogether.

223 Masonic Temple.

Special Article

GLANDULAR PHYSIOLOGY AND THERAPY

PARATHYROID HORMONE THERAPY

JOSEPH C. AUB, M.D.
BOSTON

NOTE.—*This article and the articles in the previous issues of* THE JOURNAL *are part of a series published under the auspices of the Council on Pharmacy and Chemistry. Other articles will appear in succeeding issues. When completed, the series will be published in book form.*—ED.

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The clinical use of the active principle of the parathyroid gland is dependent on its marked influence on calcium and phosphorus metabolism. Its physiologic effects are, in brief:

1. To raise the blood calcium and lower blood phosphorus.
2. Possibly to increase the ionized calcium in the blood.
3. To increase the calcium and phosphorus excretion in the urine.
4. To obtain the calcium for this increased demand either from a large amount of ingested calcium or from the stores in the bone.

When given in excess, parathyroid extract elevates the blood calcium excessively and a train of toxic manifestations may occur:

1. The kidney is damaged and, possibly as a result,
2. Blood phosphorus rises and
3. Nitrogenous waste products accumulate in the body fluids.
4. Abnormal deposits of calcium salts occur in soft tissues.
5. Because of the large excretion of calcium and phosphorus in the urine, kidney stones are formed.
6. Osteitis fibrosa cystica develops in bones, with an increase in activity of osteoclasts, and usually of osteoblasts. As a result, there appear generalized osteoporosis, cysts, and giant cell tumors.

CLINICAL USE

It is apparent, therefore, that when used in the clinic the effect of parathyroid extract must be carefully watched in order to obtain an effect within physiologic limits. This can be accomplished by frequent determinations of the level of calcium and phosphorus in the blood. A blood serum calcium level above 12 to 13 mg. per hundred cubic centimeters is never desirable.

Parathyroid Dosage.—It must be remembered that the strength of the unit of parathyroid hormone has been reduced recently to one fifth of its previous potency. The doses referred to in this paper, therefore, are expressed as the new 1934 revision of unitage, while the concentration of the extract and therefore the volume of injections remains unaltered. Like other active principles of glandular secretion, parathyroid extract has a greater effect when it is needed. Thus, seventy-five units a day (1934 revision) may be enough to elevate the blood calcium level from 4.5 to 7 mg. per hundred cubic centimeters of serum in a case of low calcium tetany. In normal individuals it may require 500 units a day to raise the level from 10 to 12 mg. per hundred cubic centimeters of serum. However, the variation in susceptibility is great, and amounts that will markedly elevate the blood calcium in one individual may have little effect in another. The dosage must be regulated by determination of the level of blood calcium, repeated every few days until the new blood level is stabilized. When the doses are too small, this can of course be detected by continuance of the tetany; but hypercalcemia gives few clinical indications until a level of about 14 mg. per hundred cubic centimeters of serum is reached. There then appear loss of appetite, nausea and a great sense of fatigue.

Collip showed that repeated doses of the extract are more effective than a single large injection. It is therefore wiser to give the parathyroid extract twice daily even though the injections cause some induration and pain.

Time Relations.—Parathyroid hormone, injected intravenously, has a latent period of approximately four hours, after which the blood calcium rises and therapeutic effects begin. These effects then last about twenty hours following a single injection. In contrast to this it must be remembered that calcium salts when injected intravenously exert an immediately beneficial effect, which is often prolonged beyond two hours. Vitamin D, on the other hand, when given in very large doses, gradually elevates the blood calcium level over a period of days. This effect, when once established, is maintained for at least two weeks after therapy is discontinued. An overdose of vitamin D, therefore, is associated with loss of appetite and discomfort for a prolonged period.

Duration of Effect.—The chief disadvantage of the parathyroid extract now available is the gradual loss of its effect. After several months of use an apparent immunity to it is established and then 750 units may produce no effect in a patient who originally responded well to 50 units. This characteristic limits its use to rather acute conditions, in which the treatment needs to be continued for weeks rather than months.

VITAMIN D IN RELATION TO PARATHYROID EXTRACT

Viosterol, when given in large enough amounts, exerts much the same effects on the body as parathyroid extract. It raises the calcium level in blood and excreta and it also increases the absorption of calcium from the intestinal tract; the latter is not influenced by parathyroid extract. Vitamin D also has the advantage of maintaining these effects indefinitely, and it can be

given by mouth. Therefore it is often preferable to substitute vitamin D for parathyroid extract, particularly when prolonged administration is needed.

Vitamin D has a disadvantage as well. Whereas parathyroid extract takes a few hours to establish its effect, vitamin D takes days, and this is a serious consideration in an emergency. The effects of an overdosage of vitamin D last a long time and a hypercalcemia so induced lasts for two weeks or longer, so that the accompanying nausea, lack of appetite and other more serious signs are protracted. An overdosage of vitamin D, therefore, is highly undesirable.

USES OF PARATHYROID EXTRACT

Because its most outspoken effect is to raise the blood calcium level, the clinical use of parathyroid extract is most dramatically seen in patients with a low blood calcium tetany.

Tetany. — It must be remembered that tetany is merely a symptom complex of increased neuromuscular irritability. Gastric tetany from loss of gastric secretion, or tetany due to overventilation, has little to do with calcium deficiencies but is due to an alkalosis. Measures designed to increase calcium metabolism are not indicated here. Parathyroid extract exerts its outstanding value in the treatment of acute or postoperative low calcium tetany. The removal of parathyroid glands may occur of course during a total or subtotal thyroidectomy as well as during a parathyroidectomy. Under such conditions, tetany may appear between sixteen hours and six days after the operation. Usually preceded by tingling and numbness, often with a feeling of nervousness and fright, the signs may rapidly become intense and fulminating. Carpopedal spasm, severe laryngeal spasm, and generalized convulsions associated with great cyanosis may develop and require most careful therapy if death is to be avoided. The drugs that are available must be chosen with attention to their speed and duration of effectiveness. The slow intravenous injection of calcium salts has an almost instantaneous beneficial effect, which often lasts longer than two hours. Calcium gluconate is an excellent salt for this purpose because it does not cause sloughing, as would calcium chloride, if it escapes about the vein. In the normal adult 10 cc. of a 20 per cent solution of calcium gluconate may be given intravenously if at least four minutes is taken for the injection; a few minutes later a similar amount may be injected intramuscularly. The relief from low calcium tetany by this procedure is dramatic, and if necessary the procedure may be repeated on the return of the tetany. For a more prolonged effect one must turn to parathyroid extract, which, after its four hour latent period, will elevate the blood calcium for nearly twenty hours. These two drugs — calcium by mouth, and parathyroid extract intramuscularly—can maintain the patient free from tetany for many weeks, and if necessary the rôle of parathyroid extract may be taken over gradually by large doses of vitamin D. It must not be forgotten that thyroid extract also mobilizes calcium stores and is therefore an aid in the therapy of this disease.

Other suggested uses of parathyroid extract are dependent on the desirability of (*a*) decalcifying the body and (*b*) raising blood levels and excretion of calcium.

The desire to have the body lose calcium occurs (1) when there are abnormal deposits of calcium salts in the tissues and (2) when there are abnormal metals stored in the bone, as in lead or radium poisoning:

1. Many attempts have been made to decalcify the abnormal deposits of calcified glands, arteriosclerosis, otosclerosis and myositis ossificans. While an occasional positive result is reported, most of these attempts have resulted equivocally. The reason for this is now clear, for it is the supply of calcium and phosphorus stored in bones that is drawn on first in times of demand. The trabeculae of bone, scattered throughout the marrow, act as a readily available supply that can store or liberate calcium, much as fat stores are available for calories. As a result of this excellent physiologic mechanism, the calcium in the abnormal deposits is not disturbed. Therefore it does not appear to be a practical procedure to attempt decalcifying therapy for any of these conditions.[1]

2. Because of the ready liberation of bone salts, it is clear that one can use a decalcifying regimen to liberate abnormal metals which may be stored in bone. Lead is the prototype of such metals, and probably the most effective method of removing lead from bones is by means of a low calcium diet plus parathyroid extract.[2] Flinn and Seidlin[3] have reported similar results for radium. Two factors in the procedure must be remembered: 1. An acid-producing salt, such as ammonium chloride, is easier to use clinically, even though slower in effect, and eventually probably has the same result. 2. Because the bone trabeculae are first drawn on, the abnormal deposits of metal that may be in the bone cortex will be affected only slightly.[4] With an inert metal like lead, it is more important to eliminate the portion stored in the trabeculae.[5] With a metal such as radium and its derivatives, however, which injures the surrounding tissues by its continuous bombardments with rays and particles, the part that remains in the bone cortex is of considerable importance, and this is not readily influenced by any known therapy.

RAISING THE BLOOD CALCIUM LEVEL

Raising the blood calcium level should theoretically be of clinical value in the healing of fractures. There has been some difference of opinion about this,[6] though it now appears evident that little benefit can be expected from this type of therapy. Nor do I think much delay in ossification could occur from the use of parathyroid extract, because callus as well as ossifying cartilage has such an affinity for holding calcium. A recent severe hyperparathyroidism in a growing boy has demonstrated that decalcification occurs in all the bones except about the areas of ossification.[7] It appears, therefore,

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7. Tibbetts, D.; McLean, R., and Aub, J. C.: Unpublished data.

that according to present evidence parathyroid extract would exert little influence on the healing of fractures.

While an adequate calcium and phosphorus intake, together with viosterol, is probably of value in the control of dental caries, it would appear obvious that the more difficult use of parathyroid extract would not be indicated in this regard.

There are many other conditions in which high calcium therapy has been declared of value. Only two of these need to be discussed here: pregnancy with lactation, and edema.

Pregnancy with lactation has great effects on the calcium stream in the body. This was dramatically demonstrated by the observations of Kozelka, Hart, and Bohstedt,[8] in which they showed that adult thyroparathyroidectomized dogs lived satisfactorily when given 13 rat units of vitamin D daily until they became pregnant. Their requirements for vitamin D to prevent tetany then gradually rose to 26,000 units, and during lactation to more than 40,000 units daily. It is not difficult, therefore, to understand the appearance of tetany and the bodily need for high calcium therapy and its adjuncts during this period. In a prolonged demand such as this, the control of tetany can usually be accomplished by the wise use of adequate amounts of milk and vitamin D. Only rarely will the more urgent treatment of tetany, already described, be needed.

Edema. — Parathyroid extract has been advised to reduce the edema of acute and chronic nephritis,[9] of nephrosis,[10] and also of cardiac failure.[11] Some investigators have found that persistent edema responded well to the daily injection of 250 units of parathyroid extract for a few days. This therapy corresponds to the good reports of other investigators following the use of calcium salts. While the difficulties associated with injections of parathyroid extract remain a deterrent factor in their use in edema, this method of therapy should not be neglected. In cases resistant to other forms of therapy, parathyroid extract may well be tried.

Parathyroid extract has also been recommended in asthma and vasomotor rhinitis, in hemorrhage, in jaundice, and in gonorrheal epididymitis and salpingitis, but its use in these conditions has not been adequately established.

SUMMARY

The chief therapeutic value of parathyroid extract is dependent on its influence on the blood levels of calcium and phosphorus. Its major use, therefore, lies in the treatment of acute low calcium tetany. In this condition it may be a life saving measure. Parathyroid extract may also be chosen for other therapeutic purposes. In these less urgent conditions, its beneficial effect arises from the liberation and the increased excretion of salts derived from bone.

695 Huntington Avenue.

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Council on Physical Therapy

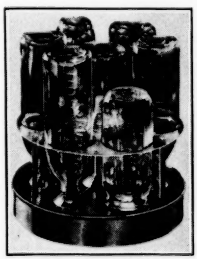
THE COUNCIL ON PHYSICAL THERAPY HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT. HOWARD A. CARTER, Secretary.

CAPSON BABY'S NURSING BOTTLE STERILIZER ACCEPTABLE

Manufacturer: Capson Manufacturing Company, 4115-4121 Ravenswood Avenue, Chicago.

Sterilizing baby's nursing bottles is accomplished by live steam at approximately atmospheric pressure with this device.

The Capson Sterilizer consists of an inverted pan (12 inches in diameter) approximately 1 inch in depth, with seven aluminum tubes projecting upward approximately 2 inches, and a kettle about 14 inches deep. The rack and tubes are placed in the deep kettle containing clear water. One-half inch of water is sufficient to allow space under the tubes for the steam to collect. The kettle is deep enough to permit the bottles to stand upright. Bottles are inverted over the steam tubes and are held in place by a guide. After the cover has been placed on the deep kettle, it is placed over a source of heat. Live steam circulates in the inverted bottles, and the surface of the bottle, including the neck and outside, are sterilized.



Capson Sterilizer.

The Capson Sterilizer is made in two models, Model A being entirely of aluminum and Model B having aluminum tubes. The rack with the inverted pan and bottle rest are made of heavily coated tin plate.

According to the firm, the reason for devising this unit is to do away with sterilizing baby bottles in large volumes of water, which requires that the bottles be completely submerged, and a long time over a source of heat is required to bring the water to a boiling point. Furthermore, in some localities, when the bottles are removed from the boiling water, a deposit is invariably found in the bottles, usually white but sometimes red, depending on the mineral contents of the water. This deposit, although sterile, is objectionable to the eye, and the manufacturer claims that it probably forms a splendid base for bacteria. In using the Capson Sterilizing method, the bottles are rinsed after use and inverted over the tubes, and the sterilizer is set into the deep kettle. When the water comes to a boil, live steam circulates in and around the bottles, sterilizing them and leaving no deposit. Ten minutes' boiling time is required to sterilize the bottles effectively. The nipples may also be sterilized by confining them in a small bottle made for the purpose. This bottle is inverted over one tube in the same manner as the nursing bottles.

In a laboratory acceptable to the Council, the Capson Baby's Nursing Bottle Sterilizer was investigated. The purpose of the test was to determine the efficacy of the Capson Nursing Bottle Sterilizer when confined within a large kettle. The objects were (1) to determine whether the apparatus sterilizes the inner surface of the nursing bottles, (2) to determine whether the lip and outside of the necks of the nursing bottles are sterilized, and (3) to determine whether the inner surface of the nipple jar, metal funnel-cap and nipples are sterilized.

Cultures used for test were stock strains of Staphylococcus aureus, B. typhosus (Eberthella typhi) and B. coli grown in broth twenty-four hours diluted 1:10 for use. Contamination was performed by smearing 2 cc. of the diluted cultures over the inside of 8 ounce narrow-mouth nursing bottles and 2 cc. over the lip and outside of the neck and by running 2 cc. of each suspension into the nipple jar containing the nipples, in such a manner that the funnel, the inside of the jar and the nipples were soiled.

The Capson Sterilizer with bottles, nipples and jar were placed in a covered kettle, containing about one-half inch of water and were steamed ten minutes.

Controls consisted of boiling for twenty minutes in water in a covered boiler a parallel set of contaminated bottles and nipples.

After "sterilization" tests for sterility were made by (*a*) flushing the outside of the neck and lip of the bottle with a tube of broth, (*b*) flaming the mouth of the bottle, pouring in a tube of broth then plugging the bottle with sterile cotton and flushing the inside of the bottle with the added broth, (*c*) placing the nipples in flasks of broth, and (*d*) flushing the inside of the nipple jar with broth and then pouring broth into a sterile test tube. The broths were then incubated for forty-eight hours. Tests were also run, in which diluted cultures with sterile milk were used instead of salt solution.

B. subtilis, which is a spore-bearing organism resistant to sterilization, was introduced as a trial organism to test the effectiveness of the sterilizer without the expectation of success, for autoclaving is the only certain heat method for killing spores. The results, while not successful, compare favorably with the control boiling method according to the limited number of experiments performed. The tests in which the contaminated utensils were permitted to dry and in which milk dilutions of the organisms were used were designed to approximate actual conditions that might eventuate.

Within the scope of these experiments the Capson Nursing Bottle Sterilizer as modified, by operating within a covered pail and by the nipple jar seating on the spout, is an effective and practical method for sterilizing nursing bottles and nipples.

This Sterilizer will effectively sterilize only when it is confined within a deep kettle and the cover placed on it. In view of the favorable report as to the efficacy of this sterilizer, the Council on Physical Therapy voted to include the unit in its list of accepted devices.

TOMAC OXYGEN INSUFLATOR ACCEPTABLE

Manufacturer: American Hospital Supply Corporation, Chicago.

The Tomac Oxygen Insuflator is a portable tracheal apparatus for the administration of oxygen. The outfit is small and compact, weighing less than 15 pounds, which provides for easy removal to the bedside of a patient or wherever needed.

Over-all dimensions are 8¼ inches high by 9 inches wide by 7 inches deep. All gages and the regulator are set in a black bakelite panel and mounted at the eye level when in use. The entire unit is made of stainless steel, equipped with a carrying handle mounted on top. All inside parts are silver soldered. The unit has a visible water gage at the left of the regulator, a hose connection at the rear, and is equipped with a Tomac flow gage and Tomac pressure gage.

Tomac Oxygen Insuflator.

A regulator, which reduces 2,000 pounds per square inch pressure with safety and makes possible constant and controlled volume and pressure, is part of the equipment. The unit is also equipped with a pop-off valve as a means of safeguarding the patient and the operator against building up dangerous back pressures of oxygen. It has a maximum flow of oxygen of 15 liters per minute.

The Tomac Oxygen Insuflator was used in a clinic for a period of eighteen months, and compared with other types of insufflators. The humidifier was found to deliver 20 mg. or more of water per liter over the therapeutic range of 5 to 15 liters per minute. The water gage is designed so as to indicate clearly the upper and lower levels of water that are necessary to saturate the oxygen. The water trap has a capacity much over that of the humidifying chamber.

In view of the efficiency, durability and good performance of the Tomac Oxygen Insuflator, the Council on Physical Therapy voted to include the unit in its list of accepted devices.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

PAUL NICHOLAS LEECH, Secretary.

AZOCHLORAMID.—A product containing approximately 96 per cent of N,N-Dichloroazodicarbonamidine.—($H_2N(ClN)$: C-N=N-C:(NCl).NH_2)—An N-chloro derivative of azodicarbonamidine.

Actions and Uses.—Similar to those of chloramine, dichloramine, and solution of chlorinated soda, over which it is claimed to have an advantage in that it possesses lower reactivity with extraneous organic matter and higher bactericidal activity in the presence of organic material. Solutions of azochloramid are proposed for dressing, packing or irrigating infected wounds and cavities. Internal use of azochloramid solutions is not recommended. The available evidence indicates that the substance possesses a relatively low toxicity.

Dosage.—Azochloramid is usually employed in concentrations of 1:1,600 and 1:3,300 in approximately isotonic buffered saline solutions. A solution containing one part of azochloramid in 500 parts of glyceryl triacetate (triacetin) and possessing greater stability than the aqueous solutions may also be used.

Manufactured by Wallace & Tiernan Products, Inc., Belleville, N. J. U. S. patents 1,958,370 (May 8, 1934; expires 1951) and 1,958,371 (May 8, 1934; expires 1951). U. S. Trademark.

Azochloramid Buffered Saline Mixture (for preparing 1 liter of a 1:3,300 aqueous solution): Vials containing azochloramid 0.3 Gm., sodium phosphate 0.6 Gm., potassium phosphate (monobasic) 0.09 Gm., and sodium chloride 8.5 Gm.

Azochloramid Buffered Saline Mixture (for preparing 1 gallon of a 1:3,300 aqueous solution): Vials containing azochloramid 1.14 Gm., sodium phosphate 2.27 Gm., potassium phosphate (monobasic) 0.34 Gm., and sodium chloride 32.18 Gm.

Azochloramid Buffered Saline Mixture (for preparing 1 liter of a 1:1,600 aqueous solution): Vials containing azochloramid 0.6 Gm., sodium phosphate 0.6 Gm., potassium phosphate (monobasic) 0.09 Gm., and sodium chloride 8.5 Gm.

Azochloramid Buffered Saline Mixture (for preparing 1 gallon of a 1:1,600 aqueous solution): Vials containing azochloramid 2.27 Gm., sodium phosphate 2.27 Gm., potassium phosphate (monobasic) 0.34 Gm., and sodium chloride 32.18 Gm.

Azochloramid occurs in bright yellow needles or plates. It possesses an odor suggestive of chlorine and has a burning taste. When pure it is odorless and practically tasteless. It is very slightly soluble in water, slightly soluble in glycerin and ether; soluble in alcohol; soluble (incompletely) in glacial acetic acid, acetone and ethyl acetate; very slightly soluble in chloroform, and nearly insoluble in carbon tetrachloride and liquid petrolatum. Azochloramid decomposes (explosively) without melting at 155.0-155.5 (U. S. P. X Melting Point Method). Solutions of azochloramid decompose on exposure to light.

Agitate 0.01 Gm. of azochloramid with 35 cc. of water: a practically complete solution (yellow-orange) occurs with only a very slight turbidity at most. Treat 5 cc. portions of this solution as follows: Add 0.25 cc. of silver ammonium nitrate solution: a brick-red precipitate forms, soluble in an excess of ammonia water; add 2 cc. of potassium iodide solution and agitate with 0.5 cc. of chloroform: the chloroform layer is colorless or at most very faintly colored; add 0.1 cc. of diluted hydrochloric acid to the mixture and further agitate: the chloroform layer acquires a deep violet color; add 2 cc. of diluted nitric acid solution and 1 cc. of silver nitrate solution: a slight white turbidity but no precipitate forms; add sulphurous acid solution until the yellow color disappears; add 2 cc. of diluted nitric acid solution and 1 cc. of silver nitrate solution and agitate: a curdy, white precipitate remains soluble on addition of excess ammonia water; add from 30 to 40 cc. of water and treat according to the U. S. P. X turbidimetric test for chlorides: the turbidity is less than that produced in a control test made with 0.1 cc. of fiftieth normal hydrochloric acid.

Dissolve about 0.1 to 0.15 Gm. of azochloramid, accurately weighed, in 20 cc. of glacial acetic acid in a glass stoppered 250 cc. erlenmeyer flask. Add 10 cc. of potassium iodide solution and 50 cc. of distilled water, allow the mixture to stand for ten minutes and titrate the liberated iodine with tenth-normal sodium thiosulphate. The number of cubic centimeters of tenth-normal sodium thiosulphate consumed per gram (due to active chlorine and the azo group, —N=N—) is not less than 317 cc. nor more than 328 cc.

Dissolve from 0.12 to 0.15 Gm. of azochloramid accurately weighed, in 15 cc. of glacial acetic acid contained in a 400 cc. beaker; add 90 cc. of water with stirring and follow with sufficient sulphurous acid solution to produce a clear colorless solution. Add 20 cc. of silver nitrate solution and 20 cc. of diluted nitric acid solution. Heat the solution until it boils and set aside for several hours. Filter through a prepared Gooch crucible and wash the precipitate well with portions of hot water slightly acidified with nitric acid, wash with one portion of cold water, dry at 105 C. for one and one-half hours, cool and weigh: the chloride (Cl^-) calculated from the silver chloride weighed is not less than 38.25 per cent nor more than 38.75 per cent.

Heat from 0.2 to 0.3 Gm. of azochloramid accurately weighed, for five hours at 100 C.: the loss in weight is not less than 0.6 per cent nor more than 0.7 per cent. Heat about 0.25 Gm. of azochloramid, accurately weighed, in a platinum dish, until constant weight is attained: the ash is less than 0.1 per cent.

Committee on Foods

THE COMMITTEE HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT.

RAYMOND HERTWIG, Secretary.

AMENDMENT OF COMMITTEE DECISION "FORTIFICATION OF FOODS OTHER THAN DIETARY STAPLES WITH VITAMIN D"

The second paragraph of the respective Committee Decision (THE JOURNAL, Feb. 16, 1935, p. 563) has been amended to include cake, cake flour, cheese and beer as examples of foods not warranting fortification with vitamin D. The amended paragraph will read:

"Examples of foods not warranting fortification with vitamin D are beer, cake, cake flour, cheese, ice cream and sausage, and such accessories as chewing gum.

ACCEPTANCE WITHDRAWN

ORANGE CRUSH CARBONATED BEVERAGE

Manufacturer.—Orange-Crush Company, Chicago.

Description.—Carbonated beverage prepared from carbonated water, sucrose, orange juice (one twentieth by volume of the beverage), citric acid (lemon juice), sodium benzoate (0.05 per cent), orange oil and United States Department of Agriculture certified color.

Manufacture, Analysis and Vitamins.—See announcement, THE JOURNAL, March 31, 1934, page 1004.

Reasons for Withdrawal of Acceptance.—Orange Crush Beverage was accepted on condition that all advertising would appropriately present the product as a beverage containing little orange juice and prominently display a complete descriptive statement defining the article. The name Orange Crush, unless appropriately qualified in each individual piece of advertising, incorrectly implies that the product is either all orange juice or essentially orange juice. In fact, only one twentieth by volume of this beverage is orange juice.

The company subsequent to acceptance did not demonstrate compliance with these requirements in respect to advertising apart from the label. The advertising continued to present the product as "Orange Crush." After approximately one year the company found that competitive advertising practices in the field of beverages would not permit the successful merchandising of Orange Crush Beverage in accordance with Committee requirements for advertising and requested withdrawal of acceptance.

Names and advertising for beverages should correctly inform the public of the nature and food value of beverages it purchases. Any name or advertising that may lead the consumer to believe a beverage containing little fruit juice is essentially or in considerable part fruit juice is seriously misleading. Orange juice and Orange Crush Beverage are distinctive products with wholly unlike nutritional values. Orange juice is a rich source of vitamin C, whereas Orange Crush Beverage contains only an insignificant quantity.

The bottle label for Orange Crush Beverage comes within the jurisdiction of the federal Food and Drugs Act and is satisfactory for informing the consumer. This law, however, unfortunately does not govern food advertising apart from package labels.

Under these conditions the public has no legal protection from false and deceptive advertising. Beverages and other foods may be advertised in a false and deceptive manner with respect to composition and food values without legal interference.

In that the company finds itself competitively unable to advertise Orange Crush Beverage in accordance with the Rules and policies of the Committee on Foods for truthful advertising, acceptance is being withdrawn and the product will no longer be listed among the accepted foods of the Committee on Foods.

ACCEPTED FOODS

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.

RAYMOND HERTWIG, Secretary.

MOUNT ROYAL DAIRIES PASTEURIZED HOMOGENIZED MILK

Distributor.—Mount Royal Dairies, Ltd., Montreal, Canada.

Description.—Bottled, pasteurized, homogenized milk.

Preparation.—Milk obtained from producers licensed by the Montreal Board of Health and subject to the requirements of the Province of Quebec is regularly tested for milk fat, bacterial content and its reaction to methylene blue. A rigid inspection is also maintained in the dairy's own laboratory. Milk passing these tests is heated to 63 C., filtered at 49 C., homogenized under 2,500 pounds pressure, pasteurized by the holding method (63 C. for thirty minutes), cooled to 3 C. and automatically filled in bottles by the usual procedure (THE JOURNAL, Sept. 1, 1934, p. 681).

Analysis.—Standardized to contain not less than 3.7 per cent of milk fat.

Calories.—0.7 per gram; 20 per ounce.

Claims of Distributor.—The cream does not separate. The curd formed in the stomach is softer than that from unhomogenized milk.

KISMET CAKE FLOUR

Manufacturer.—Noblesville Milling Company, Noblesville, Ind.

Description.—Short patent flour prepared from soft winter wheat; bleached and matured.

Manufacture.—Soft winter wheat is cleaned, scoured, tempered and milled by essentially the same procedure as described in THE JOURNAL, June 18, 1932, page 2210. Chosen flour streams are blended, bleached with a mixture of benzoyl peroxide and calcium phosphate (one-half ounce per barrel), matured with beta chlora (2 ounces per barrel), and packed in paper sacks.

Claims of Manufacturer.—Recommended for cake and pastry baking.

CELLU APPLE SAUCE PACKED IN WATER WITHOUT ADDED SUGAR OR SALT

Distributor.—The Chicago Dietetic Supply House, Inc., Chicago.

Packer.—Geneva Preserving Company, Geneva, N. Y.

Description.—Canned cooked apple sauce prepared from peeled and cored apples: packed in water without added sugar or salt.

Manufacture.—New York State Baldwin or Greening apples are automatically peeled, cored, trimmed, inspected, immersed in cold salt solution to arrest enzymatic action, again inspected for removal of bruised sections, particles of cores and any other defects, are cooked in an atmosphere of steam, screened and automatically filled into cans, which are sealed, processed for about ten minutes in boiling water and immediately cooled.

Analysis (submitted by distributor).—

	per cent
Moisture	89.4
Total solids	10.6
Ash	0.2
Fat (ether extract)	0.3
Protein (N × 6.25)	0.3
Reducing sugars as invert sugar	6.1
Sucrose	1.5
Crude fiber	0.8
Carbohydrates other than crude fiber (by difference)	9.0

Calories.—0.4 per gram; 11 per ounce.

Claims of Distributor.—For diets in which sweetened fruit is proscribed.

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SATURDAY, JULY 20, 1935

PROLONGATION OF HUMAN LIFE

The obituary notices regularly published in THE JOURNAL offer data that should make the physician pause in his professional treadmill and reflect on his own mode of living. A list of 100 deaths of physicians was made up from the notices in THE JOURNAL. Suicides and accidental deaths were excluded. In this group 65 per cent died of cardiovascular disease; the youngest died at 37 of carcinoma; the oldest physician, aged 89, died of cardiac failure. The average age of this small group was 64 years. In the registration area of the United States in 1928, cardiovascular disease caused the death of 45.5 per cent of those over 45 years. Allowing for the smallness of the group of physicians studied, the percentage of deaths from cardiovascular disease is still excessive. The anxieties and stresses of medical practice, irregularities in dietary habits, the disturbed rest and the multifarious activities of a busy practitioner tend to exhaust the cardiovascular apparatus. Comparative anatomists have established that the natural life expectancy of an animal is usually five times the period needed for full skeletal development. Since 21 years is required for full skeletal growth in man, the age of 105 might be set as the approximate normal human limit.

Montaigne said "Men do not usually die; they kill themselves." During the past century there has been a substantial increase in the general life expectation as the result of modern advances in hygiene and sanitation. Most of the progress has been achieved in infant and young life. Little has been accomplished in the improvement of health and mortality in older persons. Under present conditions, thirty-three out of every hundred thousand people in the United States may expect to live 100 years. Most people fall by the wayside between 60 and 80 years of age. At the later periods of life the mortality is chiefly due to degenerative diseases such as arteriosclerosis, chronic nephritis, heart disease and cerebral hemorrhage. Among numerous factors that may conceivably influence the health and life of the individual are heredity, diet, habits of work and thought, pleasures, climate, economic status, social position, profession or occupation, race, and exposure to infectious diseases such as pneumonia, tuberculosis and syphilis.

Longevity may be considered from the broad point of view of the biostatistician, who deals with mass figures and considers the longevity of groups and strata of the population. Life expectancy during the Middle Ages is estimated at 21 years. During the eighteenth century in France, 29 years was the average expectation of life. In 1859 in the same country it was estimated at 40 years. The United States had a life expectancy of 48 years in 1915. In 1925 it was 55 years, and in 1926 it reached 57.74 years. Dublin [1] has studied the Massachusetts life tables from 1890 to 1930. He observed that the gains in expectation of life have been greater among females than among males. These gains decrease rapidly from decade to decade, until at the age of 40 they virtually disappear. There have been significant qualitative changes in mortality as studied during this forty year period. Certain diseases that ranked high in mortality forty years ago are not important now. Diseases that now assume a high position in the mortality list were not included at the beginning of the twentieth century. In the first five years of the century, tuberculosis led all other diseases by a large margin with a death rate of 184.7 per hundred thousand. By 1925-1929 this disease had fallen to sixth in rank, with a death rate of 77.2 per hundred thousand. Organic heart disease, which was third in order at the beginning of the century, is now the leading cause of death, with a mortality almost double that of thirty years ago. In only one respect has modern sanitation and medical science been able to effect any improvement in mortality from cardiac disease. There has been a considerable drop in death rate among children and in adults up to the age of 45; but in older ages the rate has greatly increased. The general aging of the population is in part responsible for the rise in the death rate from heart disease. Many who might have been victims of other diseases under previous conditions of sanitation now succumb at older ages to heart disease. Diphtheria has been almost completely eliminated, as the result of vigorous public health campaigns and the general use of toxoid. The most conspicuous example of a disease that has utterly disappeared as a leading cause of death is typhoid. This has been accomplished by the modern practice of sanitation and hygiene.

Although mass statistics indicate a definite upward trend in the duration of life, individual longevity is still problematic and the resultant of hereditary and environmental influences. Pearl,[2] who has studied longevity as a problem in biostatistics, states that the average

1. Dublin, L. J., and Lotka, A. J.: The History of Longevity in the United States, Human Biology **6**: 43 (Feb.) 1934.
2. Pearl, Raymond: The Distribution and Correlation of Variation in the Total Immediate Ancestral Longevity, Human Biology **6**: 98 (Feb.) 1934.

value of this biologically important characteristic is constant for the particular species, variety or race. By a series of studies on the total immediate ancestral longevity (TIAL), which is the mean sum of the ages of death in the six immediate ancestors of an individual, Pearl concludes that the total immediate ancestral longevity is as definite a biologic attribute as the individual's height. He finds that the average longevity of ancestors in a group of nonagenarians and centenarians is greater than that of persons not selected for their longevity. It is of great interest that 13.4 per cent of this nonagenarian group was bred from matings in which neither parent was long lived. With respect to innate genetic longevity Pearl finds three large groups: those dying under 50 years of age, those dying between 50 and 70 years, and those dying after 70 years. In comparison with heredity, Pearl finds that environment is less potent a factor in determining longevity. Alexander Graham Bell [3] studied the genealogy of the Hyde family (8,797 persons) to determine the conditions associated with longevity. He found that a tendency to longevity is an inheritable characteristic. In cases in which neither parent lived to be 80, only 5.3 per cent of the offspring lived to be 80 or older. When only one parent lived to be 80 or older, 9.8 per cent of the offspring survived to 80 or beyond. When both parents lived to be 80 or older, 20.6 per cent of the children lived to be 80 or older. The average duration of life of the progeny was greatest in cases in which the parents were long lived, least when they were short lived, and intermediate when the parents died at intermediate ages. There was a direct correlation between the duration of life in the parents and the longevity of their children. The younger the parents were at marriage, the greater was the average longevity of their progeny. Children born during the first ten years of married life were longer lived than those born later. Bell concluded that heredity is a most significant factor in determining longevity. Nakayama [4] sent questionnaires to 10,000 octogenarians in Japan. He found that the majority of the aged had long lived grandparents, parents, brothers and sisters. They were found mostly in the middle classes. The lower classes ranked second as concerns longevity and the upper classes third. The majority proved to be the eldest son or daughter. Most of them were born when the fathers were between 26 and 30 years of age and the mothers between 21 and 25 years. Nakayama found that longevity was rare among the unmarried. The aged had an average constitution, but some were corpulent and a few were slender. Tall men lived long, but short individuals did not. As concerns personal habits, most of these old persons went to bed early and arose late. They usually had led a quiet life. Half of them were drinkers, but the women were all nondrinkers. Nakayama concludes that for long life it is necessary to come from long lived parents, preferably of the middle classes and located in rural rather than urban communities.

Longevity is an art as well as a science. The art consists in practicing a reasonable adaptation to environment and adherence to the laws of hygiene based on a knowledge of oneself and one's needs. The mental outlook is as important as the physical aspect of living. It is desirable to cultivate equanimity, contentment and optimism. All disturbing passions such as anger, envy and jealousy should be avoided. Diet is important in the maintenance of reasonable longevity. Authorities agree that the amount of food should be restricted in old age. Nevertheless a strict adherence to stringent rules of diet is not desirable, since it may become a neurotic fad. The progressive decline in the course of life is not an inexorable law. The tempo of the biochemical processes may be increased or diminished by modes of living. Modern high tension living and intense competition accelerate the rate of living and evoke premature senility, followed by premature death due to cardiovascular degeneration. Old age has been shelved as useless in a society based on material standards. This is erroneous. Consider the productivity and usefulness exemplified by the old age of Michelangelo, Titian, Luigi Cornaro, Gladstone, Edison and Jacobi. Emerson has said that men old in years and intellect have composed the greatest governments. As Thewlis [5] suggests, old age is more beautiful and fruitful than is ordinarily supposed. Dr. Abraham Jacobi was in active practice past the age of 87, after having practiced more than sixty-three years. He remained keen of intellect and memory and his advice was sought by many. The distinguished surgeon W. W. Keen wrote his system of surgery when he was past 70. Physicians should consider physiologic old age as a happy state worth achieving and should encourage the aged to carry on their work.

Geriatrics has been a neglected field of medicine. At present the mortality at advanced ages is considerably more than necessary, owing to neglect of special study in the anatomy and physiology of senescence. The tissues of the aged are vulnerable as in early life to childhood diseases such as thrush, bronchitis, chilblains, eczema and pneumonia. There is a tendency to develop growth irregularities such as warts, acne, nevi, moles and freckles. Gilford [6] calls attention to the defective immunity that accompanies senile degeneration, with resulting susceptibility to bacterial invasion. The rate of senescence varies in different individuals and in various organs. The thymus gland dies in youth, the ovaries at about 48, and the testes around 65 years. In the rare condition of progeria, a person may be senile in early childhood and die of old age in adolescence. Similarly the flame of life may flicker much beyond the

3. Bell, A. G.: The Duration of Life and Conditions Associated with Longevity, Genealogical Record Office, Washington, D. C., 1917.
4. Nakayama: Longevity and Moderation, Japan Letter, J. A. M. A. **101:** 1090 (Sept. 30) 1933.
5. Thewlis, M. W.: Geriatrics, St. Louis, C. V. Mosby Company, 1924.
6. Gilford, Hastings: The Disorders of Post-Natal Growth and Development, 1911.

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usual term. Many biochemical mysteries are involved in these phenomena, which challenge the curiosity and spirit of the scientific investigator. Elie Metchnikoff, an eminent student of longevity, has said: "Human life does not last as long as it ought to in ideal conditions. We may predict that when science occupies the preponderating place in human society that it ought to have, and when knowledge of hygiene is more advanced, human life will become much longer and the part of old people will become much more important than it is today."

CHEMICAL NATURE OF HEMATOPOIETIC SUBSTANCES PRESENT IN LIVER

The observation about nine years ago that liver contained a substance which when fed to patients with pernicious anemia produced a dramatic improvement aroused immediate interest regarding the chemical nature of the active substance. Chemical "dissections" of the complex hepatic material were undertaken in several laboratories and within a relatively short time information that gave considerable insight into the chemistry of the hematopoietic substance was reported.[1] The active agent did not appear to be a carbohydrate, lipid, protein, proteose, peptone, simple polypeptide, purine, pyrimidine or single amino acid. Apparently it was a nitrogenous base, perhaps a secondary or tertiary amine. Further evidence of the nitrogenous character of the substance was reported by another group of investigators;[2] their results, however, suggested that the active agent was probably a simple polypeptide.

In the five years since the completion of these pioneer investigations, progress in studies of the chemistry of the active hematopoietic substance has become increasingly difficult because the availability of effective antianemia preparations has lessened the number of satisfactory patients for the assay of the various chemical fractions. Also, experience has shown that many of the chemical methods of choice for the fractionation of the crude preparations cannot be employed because of the consistent inactivation of the product. However, within the past few months progress has been made; one group of investigators,[3] has separated from potent liver extracts three substances that may prove of importance. Two of these were obtained in crystalline form; one was identified as *l*-tyrosine and the other was believed to be a complex purine. The identity of the third fraction had not been ascertained. Both the tyrosine and the purine derivative produced a marked reticulocytosis when administered to guinea-pigs, and the latter also exerted a favorable therapeutic effect in canine black tongue. It should be borne in mind, however, that the value of these two experimental animals as hematopoietic test subjects has not as yet been adequately determined. A recent comment[4] on a report of the clinical trial of the three fractions states that none of them when used alone possessed clinical activity, whereas a mixture of the three was highly effective as a remedy for pernicious anemia. This work seems to indicate that several substances having a mutual supplementary action are responsible for the clinical value of liver in the treatment of pernicious anemia.

Meanwhile, a report of comprehensive chemical studies describing results considerably different from those just discussed has appeared.[5] The chemical behavior of the active material isolated by Dakin and West resembled that of a derivative of a polypeptide. It was precipitated by Reinecke acid and could be salted out by ammonium sulphate, magnesium sulphate or sodium chloride. The clinical activity was readily destroyed by exposure to cold half-normal sodium hydroxide, by boiling for one hour with half-normal sulphuric acid, or by treatment with the salts of certain heavy metals. Some insight regarding the possible chemical composition of the substance was gained by studying the products obtained by the hydrolysis of relatively pure preparations. One of these products was an aminohexose, similar to glucosamine but not definitely identified as such. The amino acids lysine, arginine, glycine, leucine, hydroxyproline and aspartic acid were definitely identified in hydrolysates of the purest preparations. Pyrimidine and purine bases were absent and some active preparations contained practically no inorganic material. The possible molecular weight of the substance, as determined by a titration method, was found to be some multiple of 1,430, a value not unlike the values expected for polypeptides. As indicated by the rate of liberation of free amino groups, active preparations were digested by pepsin although the process was slow and incomplete; ereptic digestion was likewise slow but was fairly complete. On the whole, these data strongly suggest that the active antianemic substance may be an aminohexose polypeptide; however, as the authors point out, no claim to strict chemical individuality can be advanced as yet, since the separation of this type of compound must of necessity be extremely difficult. However, the probable high degree of purity of the preparations employed by these investigators is indicated clinically by the fact that the parenteral administration of only 30 mg. gave perceptible reticulocyte responses in suitable patients with pernicious anemia, whereas 80 mg. produced maximal responses. The possible relationship of the active hematopoietic substance isolated by these investigators

1. Cohn, E. J.; McMeekin, T. L., and Minot, G. R.: The Nature of the Material in Liver Effective in Pernicious Anemia: IV. J. Biol. Chem. **87**: xlix (June) 1930.

2. West, Randolph, and Howe, Marion: A Crystalline Derivative of an Acid Present in Liver, Active in Pernicious Anemia, J. Biol. Chem. **88**: 427 (Aug.) 1930.

3. Subbarow, Y.; Jacobson, B. M., and Fiske, C. H.: The Saparation of the Substances in Liver Which Are Reticulocytogenic in the Guinea-Pig and Which Are Therapeutically Effective in Experimental Canine Black Tongue, New England J. Med. **212**: 663 (April 11) 1935.

4. Science News, Combination of Substances Needed for the Cure of Anemia, Science **81**: 8 (May, supp.) 1935.

5. Dakin, H. D., and West, Randolph: Observations on the Chemical Nature of a Hematopoietic Substance Occurring in Liver, J. Biol. Chem. **109**: 489 (May) 1935.

to products of the partial digestion of gastric mucin, itself a glycoprotein, may be of special interest in view of the well known value of gastric tissue in the treatment of pernicious anemia. Further work along these lines may well yield valuable information.

Current Comment

SAFE PROCESSES FOR HOME CANNERS

An economic emergency, such as that of the last few years, is usually accompanied by increased efforts to conserve food. An important part of the present federal relief program is the urging of the unemployed to raise vegetables and to preserve them by canning. In view of the well known dangers from inadequately processed foods, a careful consideration of safe procedures for the home canning of foods is imperative. The incidence of poisoning from home canned foods, particularly botulism, is most frequent in the case of the "nonacid" foods, such as green beans, carrots, beets, spinach and asparagus; apparently the "acid foods" are more easily sterilized. An examination of much of the literature for the home canner reveals a great confusion in the recommendation for safe procedures. Often the instructions are based on insufficient or incompetent experimental work and as frequently, perhaps, they are biased for commercial reasons. The methods suggested for home canners may be classed into three groups: the boiling water, the oven, and the pressure cooker procedures. A recent critical comparison of these three methods [1] has shown that the pressure cooker process is the only one that is safe beyond question. Standard quart glass jars of cream corn were subjected to the three commonly used methods of food processing; namely, heating in the pressure cooker at 15 pounds, in a hot air oven at 250 F., and in boiling water. The temperature of the contents at the center of the jar was followed by a thermocouple device. The temperature of the sample treated by the pressure method rose rapidly, reaching 212 F. in fifty minutes and the maximum temperature of 250 in seventy minutes. The temperature of the boiling water-treated sample rose more slowly and finally reached the temperature of 210 after ninety minutes. The temperature of the oven-treated jar increased even more slowly and at the end of ninety minutes had reached only 188. The importance of careful experiments of this kind cannot be overemphasized. The fact is beautifully demonstrated that at least one and one-half hours of the time employed for processing foods by the boiling water and oven methods is required to bring the temperature of the sample to the temperature of boiling water. Thus, only one to one and one-half hours remains for the destruction of toxic bacteria and their spores. This time is not sufficient, as it has been demonstrated that the spores of some strains of Clostridium botulinum are not destroyed in three hours at a temperature of 212. Other experiments similar to that just described have been conducted on other nonacid food with the same result. These data without question warrant the conclusion that the pressure cooker method of canning nonacid foods is the only safe procedure. This conclusion is in accord with a resolution recently passed by the American Public Health Association that "those who distribute literature on home canning advise the use of the pressure cooker for nonacid foods and that in the preparation of all such literature full consideration be given to bacteriological and chemical knowledge on the art of canning, so that the home maker may be given safe counsel on methods of home canning and may recognize the hazards of home-canned foods inadequately processed in the oven and in boiling water."

1. Tanner, F. W.: Proper Processes for Home Canners, J. Am. Dietet. A. **11**: 18 (May) 1935.

Association News

THE KANSAS CITY SESSION

Eighty-Seventh Annual Session to Be Held in May

The American Medical Association will hold its Eighty-Seventh Annual Session in Kansas City, Mo., May 11 to 15, 1936.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Changes in Health Officers. — Dr. Francis P. Wisner, Marysville, has been appointed health officer of Sutter County to succeed Dr. Trusten P. Peery, and Dr. William H. Eaton, for many years health officer of Santa Barbara, has been succeeded by Dr. Clarence T. Roome.

Society News. — Speakers before the Alameda County Medical Association, June 17, were Drs. Vernon G. Alderson, on "Allergic Asthma"; Fletcher B. Taylor, "Gallbladder Therapy"; Hobart Rogers, "Significance of Melena," and James Frug, "Cushing's Basophilic Syndromes and Similar Endocrinopathies." All are from Oakland.

Mussel Quarantine Again Established.—The state department of public health has established a quarantine on all mussels, covering the coast area from the southern boundary of Monterey County north to the California-Oregon boundary with the exception of San Francisco Bay. Under this ban, the sale or offering for sale of mussels gathered from the specified areas for the period May 15 to September 30 is prohibited.

Dr. Larkey Appointed Director of Welch Medical Library.—Dr. Santord Vincent Larkey, since 1930 librarian and assistant professor of medical history and bibliography, University of California School of Medicine, San Francisco, has been appointed librarian of the Welch Medical Library of Johns Hopkins University, succeeding Dr. Fielding H. Garrison, who died in April. Dr. Larkey is 37 years of age and is a graduate of the University of California School of Medicine. He will take over his new duties in the fall.

GEORGIA

State Society to Award Trophy.—The Medical Association of Georgia will award each year a cup to the district of the Georgia Congress of Parents and Teachers adjudged to be the leader in preventive health work in its congressional district for the year. The first presentation of the trophy will take place at the annual meeting of the state medical association in April 1936. The winning district will have its name permanently engraved on the cup and will keep it for a year.

Dr. Kelly Appointed Dean.—Dr. George Lombard Kelly, vice dean and professor of anatomy, University of Georgia School of Medicine, Augusta, has been elected dean by the regents of the University System of Georgia, effective September 1. Dr. Kelly has been vice dean since the early part of

1934. He is 45 years of age, and a graduate of the University of Georgia School of Medicine in 1924. At the annual meeting of the Medical Association of Georgia in 1933 he received the Crawford W. Long Medal for original research.

IDAHO

Graduate Instruction at State Meeting.—The program of the annual meeting of the Idaho State Medical Association in Boise, September 9-13, has been arranged as a graduate course. Members of the staff of Northwestern University Medical School, Chicago, will present the entire program.

Dr. Lathan A. Crandall Jr., Physiology of the Heart; Response of the Body to Wounds and Infection; Recent Advances in Physiology of the Digestive Tract; Physiology of the Liver; Glands of Internal Secretion.
Dr. William H. Holmes, Common Forms of Cardiac Disease; Pneumonia; Medical Management of Peptic Ulcer; Recognition and Treatment of the Anemias; Practical Management of the Diabetic Patient.
Dr. John A. Wolfer, Preoperative Preparation of the Patient; Wounds, Including Burns; Surgical Management of Peptic Ulcer; Cholecystitis; Significance of Postoperative Symptoms.
Dr. William R. Cubbins, Fractures of the Femur; Compound Fractures Including Osteomyelitis; Knee Joint; Fractures of the Leg Including the Ankle and Foot; Skull Fractures.
Dr. George H. Gardner, The Gynecologic Patient; Pelvic Infections; The Unhealthy Cervix; Uterine Bleeding; Newer Methods of Diagnosis and Treatment.

In addition to this program, lectures will be presented at a meeting for the public:

Dr. Crandall, Behind the Scenes of Medical Science.
Dr. Cubbins, The Layman's Duty to the Injured.
Dr. Holmes, Diet and Disease.
Dr. Wolfer, The Nature of Cancer.

Dr. Gardner will deliver a special lecture for women on the subject of menstruation.

ILLINOIS

Personal.—Dr. Felix W. Sokolowski, Chicago, has been made managing officer of the Alton State Hospital, succeeding Dr. Dudley T. Dawson, who took a similar position at the Peoria State Hospital.

Units of Diphtheria Antitoxin.—The Illinois State Department of Health will in the future issue diphtheria antitoxin for treatment purposes in vials of 20,000 units. When a larger dose is desired, a multiple number of 20,000 unit vials should be obtained. The department officials believe that deaths have occurred in the past because the dosage has been too small. For prophylactic purposes the department will continue to issue 1,000 unit vials of antitoxin.

Chicago

Dr. Hayden Appointed Head of Department.—Dr. Daniel B. Hayden, associate clinical professor of laryngology and otology, Rush Medical College, University of Chicago, has been appointed head of the department of laryngology and otology, effective July 1. Dr. Hayden graduated from Georgetown University School of Medicine in 1904, and has been associated with the Rush Medical College for many years.

KANSAS

New Headquarters for County Society.—The Sedgwick County Medical Society has purchased a building at 135 North Main Street, Wichita, which it will remodel for headquarters. In addition to the offices of Mr. M. F. Cahal, executive secretary of the society, and his assistants, the building will contain a library and an auditorium for meetings of the society. The second floor will be used for the offices and the first floor will be leased.

Society News.—At a recent meeting of the Brown County Medical Society and the woman's auxiliary, Dr. Laurence S. Nelson, Salina, spoke on "Management of Cases of Fractured Skull," and Dr. Porter D. Brown, Salina, "Anesthetics in Labor."——Speakers before the Cowley County Medical Society in Winfield recently included Dr. Charles C. Hawke, Winfield, on "Varicose Ulcers and Their Treatment"; Dr. Howard L. Snyder, Winfield, president-elect of the Kansas Medical Society, was the guest of honor at the meeting.——The Crawford County Medical Society was addressed, May 23, by Dr. Ralph Bowen, Oklahoma City, on "Practical Management of the Asthmatic Child."——At a meeting of the Harvey County Medical Society in Newton, June 6, Drs. Andrew W. McAlester, Kansas City, and Abraham C. Eitzen, Hillsboro, discussed infections of the eye and epidemic encephalitis, respectively.——The Labette County Medical Society was addressed in Parsons, May 22, by Drs. Howard E. Marchbanks and Chester Herbert Smith, Pittsburg, on heart diseases and thyroid complications, respectively.——Dr. Vern L. Pauley, Wichita, addressed the Pratt County Medical Society, May 24, on tuberculosis of the kidney and diseases of the ureter.——At a meeting of the Washington County Medical Society in Washington, June 11, Dr. James Harold Lynch, Fairbury, presented a discussion of diseases amenable to treatment by splenectomy.

MASSACHUSETTS

Memorial Service.—A memorial service for the late Dr. George H. Bigelow, director of the Massachusetts General Hospital, Boston, was held in Memorial Church of Harvard University, Cambridge, May 12.

Stimulation of State Hospital Research.—Dr. Winfred Overholser, commissioner of mental diseases of Massachusetts, has appointed a departmental research committee to stimulate and coordinate research activities in the state hospitals, according to *Science*. Dr. Abraham Myerson is chairman and other members are Drs. Douglas A. Thom, Roy G. Hoskins, Neil A. Dayton and Harry C. Solomon. The Rockefeller Foundation is supporting research programs in the Worcester and Boston state hospitals as well as a statistical project of the department at Boston, it was announced.

Personal.—Dr. Walter B. Cannon, George Higginson professor of physiology, Harvard Medical School, Boston, was elected an honorary member of the National Academy of Medicine of Spain at the recent celebration of the two hundredth anniversary of its founding, *Science* reports.——A portrait of the late Dr. George F. Curley was recently presented to the Milford Hospital by his daughter, Mrs. John W. Gahan, Medford. Dr. Curley was surgeon-in-chief to the hospital until his death in April.——Dr. Douglas A. Thom, Milton, received the honorary degree of master of science in medicine from the University of Vermont at its commencement exercises in Burlington, June 24.——Dr. Paul Dudley White, Boston, delivered the St. Cyres lecture of the National Hospital for Diseases of the Heart, London, July 10, at the house of the Royal Society of Medicine, on "Congestion Without Myocardial Failure."——Dr. John H. Nichols has resigned as superintendent of the state infirmary at Tewksbury.——Dr. Richard M. Ash has been appointed health commissioner of Quincy.

MICHIGAN

New Health Unit.—The establishment of a new health unit in Calhoun County with Dr. Matthew R. Kinde, Hastings, as director, has been announced. The unit, which is a project of the W. K. Kellogg Foundation, is financed in part by appropriations of $6,000 and $3,000, respectively, by the county and state. It will open officially September 1. Dr. Kinde has resigned as health director of Barry County to take over the new office. He has been succeeded by Dr. Robert B. Harkness, acting health officer of Eaton County for the past three months.

Society News.—Dr. Edgar E. Martmer was chosen president of the Detroit Pediatric Society at the annual meeting, June 19, and Dr. William J. Scott, secretary.——The Lenawee County Medical Society was addressed by Dr. Alpha Rees Klopfenstein, Toledo, June 19, on "Vesical Neck Obstruction."——Dr. Vernon L. Hart, Minneapolis, addressed the Houghton County Medical Society, Calumet, July 2, on "Mechanical and Physiologic Rest in the Treatment of Diseases and Injuries of the Extremities."——Members of the Jackson County Medical Society and their wives gathered at Clark Lake, June 27, for their annual spring outing.——Dr. Louis J. Hirschman, Detroit, addressed the Muskegon County Medical Society, June 29, on "Office Management of Common Rectal Diseases."

MINNESOTA

Personal.—Dr. Edward J. Engberg, St. Paul, for many years secretary of the board of medical examiners, was appointed a member of the state board of health by the governor, June 24, succeeding the late Dr. Helen H. Hielscher, Mankato. Dr. Max W. Alberts, St. Paul, has succeeded Dr. Engberg on the medical board.

Hospital Association Meeting.—The twelfth annual convention of the Minnesota Hospital Association was held at Duluth, June 20, and at Lutsen, June 21. Dr. Alloys F. Branton, Willmar, was chosen president-elect of the association and Mr. Victor Anderson, manager, Abbott Hospital, Minneapolis, was installed as president. A. M. Calvin is executive secretory. Speakers at this meeting included:

Dr. Bert W. Caldwell, Chicago, Hospital Legislation—Federal and State.
Dr. Malcolm T. MacEachern, Chicago, What Successful Hospitals Are Doing to Overcome Their Difficulties.
Mr. Robert Jolly, Houston, Texas, president, American Hospital Association, What Is the Future of the Voluntary Hospital?
Dr. Lawrence R. Gowan, Duluth, The Place of Mental Hygiene in the General Hospital Program

NEW YORK

Medal Awarded by University of Buffalo.—The Lucien Howe Medal in Ophthalmology recently awarded to Drs. Joseph H. Globus and Sidney M. Silverstone was conferred by the University of Buffalo and not by the Medical Society of the State of New York, as noted in THE JOURNAL, June 22, page 2274. The award was inadvertently confused with an award with the same name that has been made in previous years by the medical society. The late Dr. Howe gave to the University of Buffalo some years ago a sum of money, interest from which was to be used for the manufacture of a specially designed medal to be given annually to the author of a work on an ophthalmologic subject. Dr. Harold W. Cooper, Buffalo, is chairman of the committee on award.

Society News.—Speakers at the third quarterly meeting of the Ontario County Medical Society at Geneva, July 9, were the following members of the Geneva General Hospital staff: Drs. Melvin Edgerton Deuel, on "Indications for Version or Forceps in Occipitoposterior Presentations"; Thomas W. Maloney, "Preparation of the Diabetic for Surgical Procedure"; Claude C. Lytle, "Abdominal Emergencies"; Robert E. Doran Jr., "Résumé of Osteoplastic Cases," and Homer J. Knickerbocker, "Preoperative and Postoperative Care."——Dr. Frank H. Lahey, Boston, addressed the Medical Society of the County of Nassau, May 28, on "Newer Developments in Thyroid and Parathyroid States."——Dr. Arthur W. Wright, Albany, was elected president of the New York State Association of Public Health Laboratories at the recent annual meeting in Syracuse; Dr. Orren D. Chapman, Syracuse, vice president, and Miss Mary B. Kirkbride, secretary.——Dr. Elise S. L'Esperance, New York, was elected president of the Women's Medical Society of New York State at the annual meeting in Albany in May. Vice presidents elected are Drs. Madge C. L. McGuinness, New York; Alice Stone Woolley, Poughkeepsie, and Edith Fowler Wheeler, Cortland, and the secretary, Dr. Marguerite P. McCarthy, Solvay.——The medical profession of Rochester gave a testimonial dinner to Dr. Floyd Stone Winslow at the University Club, June 20, in honor of his selection as president-elect of the Medical Society of the State of New York. Dr. Edward T. Wentworth was toastmaster, and speakers included Frank Gannett, publisher of the Gannett newspapers; H. Douglas Van Duser, president of the Rochester Bar Association, and Drs. Benjamin J. Slater, Rochester, and James F. Rooney, Albany. About 200 persons were present.

New York City

Hospital Superintendent Appointed.—Dr. William B. Talbot, assistant director of Grasslands Hospital, Valhalla, since 1928, has been appointed superintendent of New York Post-Graduate Medical School and Hospital, to succeed Dr. Thomas Dwight Sloan. Dr. Talbot was graduated from Tulane University of Louisiana School of Medicine in 1922.

Personal.—The physicians and directors of Sydenham Hospital gave a dinner to Dr. Max Rosenthal, president of the medical board of the hospital, in honor of his seventieth birthday, May 15, at the Hotel Pierre. Speakers were Mr. Simon Bergman, president of the board of directors; Drs. Julius Jarcho, Jacob Heiman, Moses H. Edelman and Mr. David Tishman.——Dr. William Bradley Coley will lecture before the Royal College of Surgeons of England, London, October 10, on "Treatment of Inoperable Malignant Tumors with the Toxins of Erysipelas and Bacillus Prodigiosus, Based on a Study of End Results from 1893 to 1935." At that time Dr. Coley will be made an honorary fellow of the college.——Dr. James W. Smith was one of twelve alumni of New York University who received the Alumni Meritorious Service Award at the annual commencement of the university June 12. Dr. Smith was graduated from the school in 1917.——Dr. Florence Rena Sabin received the honorary degree of doctor of science at the annual commencement of the University of Colorado.

Dr. Gasser Appointed Director of Rockefeller Institute.—Dr. Herbert Spencer Gasser, professor of physiology, Cornell University Medical College, has been appointed director of the Rockefeller Institute for Medical Research to succeed Dr. Simon Flexner, who will retire in the autumn. Dr. Gasser, a native of Wisconsin, is 47 years old and a graduate of Johns Hopkins University School of Medicine. Previous to his medical training he had taken bachelor's and master's degrees at the University of Wisconsin and had taught physiology there for two years. After graduation from Johns Hopkins Dr. Gasser was instructor in pharmacology at Wisconsin for a year and in 1916 went to Washington University School of Medicine, St. Louis, as instructor in physiology. He served successively as associate and associate professor of pharmacology and in 1921 was appointed professor of pharmacology, remaining in that position until 1931, when he went to Cornell as professor of physiology and director of the physiologic laboratories. Dr. Gasser's chief research interests have been concerned with the coagulation of blood, the problem of traumatic shock and the electrophysiology of nerve.

NORTH CAROLINA

Society News.—Dr. Lester A. Crowell Jr., Lincolnton, addressed the Buncombe County Medical Society, Asheville, June 3, on "Pneumothorax Treatment of Lobar Pneumonia."——Drs. Edwin P. Alyea and Robert A. Ross, Durham, were among speakers at a meeting of the Sixth District Medical Society at Burlington, June 20, on "Urologic Back Pain" and "Significance of Gynecologic Pain," respectively.

OHIO

Fund for Library.—The late Mrs. Jane Moore, Columbus, established by her will a fund for the purchase and maintenance of a medical library in Columbus, in memory of her son, the late Dr. Edward Howard Moore. Drs. Florus F. Lawrence, Hervey W. Whitaker and William C. Davis, Columbus, are trustees under the will. Medical literature purchased by them will be placed in an alcove in the Columbus Public Library.

Personal.—Dr. Lyman W. Childs announced his retirement as supervisor of health service in Cleveland schools at the end of the school year. He was appointed to the school staff in 1910.——Friends of Dr. Milton L. Johnston, Harrod, gave a testimonial dinner in honor of his fiftieth anniversary in the practice of medicine, June 12.——Dr. Jones L. Hurst, Dorset, has been appointed health commissioner of Ashtabula County to succeed the late Dr. Walter S. Weiss, Jefferson.——Dr. Roy C. Hunter, Wapakoneta, was recently appointed to the state medical board of Ohio to succeed Dr. Fred Wuist, Dayton.——Dr. Arthur C. Bachmeyer, formerly dean of the University of Cincinnati College of Medicine and now director of clinics at the University of Chicago, received the honorary degree of doctor of science at the commencement of the University of Cincinnati recently.

Society News.—Dr. Harley O. Bratton, Columbus, addressed the Fayette County Medical Society, Washington Courthouse, June 7, on treatment of hypertrophy of the prostate.——Dr. Elmer R. Arn, Dayton, gave an address on the surgery of malignant growths of the stomach and colon at a meeting of the Warren County Medical Society, Lebanon, June 4.——Dr. Benedict Olch, Dayton, spoke on "The Heart After Forty" before the Greene County Medical Society, Xenia, June 6.——Dr. George W. Crile, Cleveland, addressed the Marion Academy of Medicine, June 4, on tumors of the breast.——Dr. Arnold F. Sydow, Cleveland, discussed treatment of burns at a meeting of the Portage County Medical Society, Ravenna, June 6.——Drs. Arthur C. Ernstene and William J. Gardner, Cleveland, discussed "Use of Drugs in Treatment of Heart Disease" and "Surgical Lesions of the Cerebral Blood Vessels," respectively, at a meeting of the Muskingum County Academy of Medicine in Zanesville, June 5.

PENNSYLVANIA

New Health Officers.—Dr. Eugene H. Dickenshied, Allentown, has been appointed medical director of Lehigh County to succeed Dr. Jacob Treichler Butz. Dr. Victor J. Baluta, Shamokin, has been appointed medical director of Northumberland County, succeeding Dr. Oscar E. Salter, Shamokin. Dr. J. Glenn Hemington, Uniontown, has been appointed health director of Fayette County.

District Meeting at Williamsport.—The Seventh Councilor District of the Medical Society of the State of Pennsylvania held its annual meeting at Williamsport, July 12. Speakers were Drs. Moses Behrend, Philadelphia, president of the state society, on "Differential Diagnosis of Upper Abdominal Lesions as a Factor in Reducing Morbidity and Mortality"; Ruth Hartley Weaver, Philadelphia, "Prenatal and Maternal Care"; Charles C. Wolferth, Philadelphia, "Treatment of Heart Disease." Dr. Walter F. Donaldson, Pittsburgh, secretary of the state society, discussed state society affairs, and Dr. William H. Mayer, Pittsburgh, social trends and medical service.

Society News.—Dr. Herbert T. Kelly, Philadelphia, addressed the Northampton County Medical Society, Easton, June 21, on "New Principles and Methods in the Treatment of Diabetes Mellitus."——Dr. Robert H. Jeffrey addressed the Fayette County Medical Society, Uniontown, June 6, on infections of the skin, and Dr. George H. Robinson on treatment of hemorrhoids, varicose veins and ulcers of the cervix. The society held its annual picnic jointly with the dentists of the

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county at the Uniontown Country Club, July 10.——Dr. Carl E. Ervin, Danville, addressed the Cambria County Medical Society, July 11, on "Diagnosis and Management of Chronic Digestive Disturbances."——Dr. Hyman A. Slesinger, Windber, was host to the Pittsburgh Pediatric Society at a clinic at the Windber Hospital, May 24. Dr. Ellwood W. Stitzel, Altoona, delivered a paper on "Treatment of Pseudohypertrophic Muscular Dystrophy with Glycocoll."

Philadelphia

Dr. Krusen to Head Physical Therapy Department.—Dr. Frank H. Krusen, associate dean of Temple University School of Medicine, has resigned to go to Rochester, Minn., to take charge of a physical therapy department at the Mayo Clinic. Dr. Krusen has been director of a department of physical medicine at Temple University Hospital since 1931.

Faculty Changes at the University.—Dr. Edward A. Schumann, associate professor in obstetrics at the University of Pennsylvania School of Medicine, has been made professor of obstetrics to succeed the late Dr. Edmund B. Piper. Dr. James A. Babbitt, who has been with the school for many years and was for several years acting head of the department of otolaryngology, has been made emeritus professor of clinical otolaryngology.

Personal.—Dr. Clarence A. Patten, associate professor of neurology, University of Pennsylvania Graduate School of Medicine, was recently appointed professor of neurology to succeed the late Dr. Theodore H. Weisenburg.——The Philadelphia College of Pharmacy and Science at its annual commencement, June 5, conferred the honorary degree of doctor of pharmacy on Dr. William A. Pearson, dean of Hahnemann Medical College.——Dr. Martha Tracy, dean of Woman's Medical College of Pennsylvania, has been granted a year's leave of absence from the college. Dr. Henry D. Jump will be acting dean during her absence.

Pittsburgh

Changes at the University of Pittsburgh.—Dr. Stanley S. Smith, associate professor of ophthalmology, University of Pittsburgh School of Medicine, has been appointed professor to succeed Dr. William W. Blair. Dr. George J. Wright has been made professor of neurology to succeed the late Dr. Thomas M. T. McKennan. There are sixty-five graduates from the school this year; the incoming freshman class has been reduced from sixty-seven to fifty-five.

TENNESSEE

Health at Knoxville.—Telegraphic reports to the U. S. Department of Commerce from eighty-six cities with a total population of 37 million, for the week ended July 6, indicate that the highest mortality rate (20) appears for Knoxville and that the rate for the group of cities as a whole was 10.2. The mortality rate for Knoxville for the corresponding week of 1934 was 17.3 and that for the group of cities, 10.8. The annual rate for the eighty-six cities for the twenty-seven weeks of 1935 was 12.1, as against 12 for the corresponding period of the previous year. Caution should be used in the interpretation of weekly figures, as they fluctuate widely. The fact that some cities are hospital centers for large areas outside the city limits or that they have large Negro populations may tend to increase the death rates.

Society News.—Dr. Joe T. Smith, Knoxville, was elected president of the Tennessee Pediatric Society and Dr. William W. Potter, Knoxville, president of the Tennessee Academy of Ophthalmology and Otolaryngology, at the recent annual meetings.——Dr. John A. McCulloch, Maryville, addressed the Blount County Medical Society, June 27, on "Nonspecific Urethritis."——Memphis physicians presented the program of the Tri-County Medical Association (Carroll, Henry and Weakley counties) at McKenzie, May 14, as follows: Drs. Robert Lyle Motley, "Treatment of Circulatory Emergencies"; John L. McGehee, "Appendicitis During Pregnancy," and Walter A. Ruch, "Prenatal Care."——At a meeting of the Dyer, Lake and Crockett Counties Medical Society, Dyersburg, June 5, speakers were Drs. Wilson L. Williamson and William R. Blue, Memphis, on "Recent Advances in Gynecology and Obstetrics" and "Immunology," respectively.——Physicians of Bradley, McMinn, Monroe and Roane counties held a joint meeting at Athens, May 21, with the following speakers, among others: Drs. George W. Burchfield, Maryville, "Diagnosis and Treatment of Sinus Infections"; Robert B. Wood, Knoxville, "Pneumothorax as Treatment in Pulmonary Tuberculosis," and William R. Arrants, Athens, "Obstetrics in General Practice."——Dr. Jarrell Penn, Knoxville, addressed the Knox County Medical Society, June 4, on "Fractures of the Shaft of the Femur."—Drs. Wilder W. Hubbard and Murray B. Davis, Nashville, addressed the Lincoln County Medical Society, June 4, on pneumothorax in pulmonary diseases and abdominal pain, respectively.

UTAH

Dr. Beatty Resigns as Health Officer.—Dr. Theodore B. Beatty, health commissioner of Utah since the state department of health was created in 1899, retired to private life, July 3, and was succeeded by Dr. John L. Jones, assistant commissioner and state epidemiologist since May 1934. Dr. Beatty, who is 72 years old, is a native of Illinois and a graduate of Rush Medical College, Chicago. In 1931 Dr. Beatty was elected president of the State and Provincial Health Authorities of North America. His successor is a native of Utah and graduated from Harvard University Medical School in 1925. Dr. Jones received a degree in the Harvard School of Public Health in 1928 and from that year until his appointment in Utah in 1934 was director of the bureau of communicable diseases of the state board of health of Kentucky.

VIRGINIA

Group Hospitalization Plan in Richmond.—The Richmond Academy of Medicine at a meeting June 11 approved a group hospitalization plan for the city. Six hospitals have already approved the plan, according to the July *Virginia Medical Monthly*. Commercialism is entirely eliminated, it was said, and every effort will be made under the sponsorship of the academy to make the plan a true community service. For the time being hospitalization will be limited to groups of ten persons, who will constitute not less than 40 per cent of the employed force to which they belong. There will be an enrolment fee of $1 and a monthly fee of 85 cents payable monthly.

GENERAL

Diagnostic Manual of Gallbladder Clinic.—Physicians who registered at the exhibit of the Gallbladder Clinic of the New York Post-Graduate Medical School and Hospital in the Scientific Exhibit of the American Medical Association at Atlantic City are requested to write directly to the hospital, 303 East Twentieth Street, New York, in order to receive copies of the diagnostic manual. The notebook kept at the exhibit containing addresses of interested physicians was lost on the last day of the meeting.

Outbreaks of Typhoid.—Two women carriers who helped prepare food for a picnic in Philadelphia, May 30, are believed to be responsible for an outbreak of typhoid among the 400 persons who attended. Seventy-three cases with five deaths had occurred up to July 6, according to the Philadelphia *Inquirer*. Systematic examination of the women who prepared or contributed food for the picnic revealed the carriers, who were not on the city's list of carriers and who had not suspected their condition, it was said.——More than 2,500 persons were immunized against typhoid in Richmond County, North Carolina, during June after an outbreak in several towns, newspapers reported, June 22.——Private wells in Minneapolis are being examined in an effort to trace the source of an outbreak of typhoid in the city. Thirty-five cases with one death had been reported from May 25 to June 27, according to newspaper reports.

British Physicians to Visit United States in August.—A group of British physicians will arrive in New York on the S. S. *Georgic*, August 4, on their way to the annual meeting of the British Medical Association in Melbourne, Australia, in September. The Medical Society of the State of New York will entertain the visitors on a trip to Grasslands Hospital, Valhalla, Sunday afternoon, August 4, and on the following morning to the Columbia and Cornell medical centers, the New York Academy of Medicine and the Rockefeller Institute for Medical Research. There will be an alternative trip to Rockefeller Center and the National Broadcasting Company, the two groups assembling for luncheon at the Waldorf-Astoria. The reception committee on behalf of the Medical Society of the State of New York includes Drs. Frederic E. Sondern, New York, president of the society, and Arthur J. Bedell, Albany, immediate past president. The reception committee for the American Medical Association consists of Dr. Morris Fishbein, Chicago, Editor of THE JOURNAL, and Drs. Austin A. Hayden, Chicago, and Arthur W. Booth, Elmira, N. Y., members of the Board of Trustees. Some of the British guests will be accompanied by their wives, making about 100 persons in the group.

Medical Bills in Congress.—*Change in Status:* S. 883 has passed the House, directing the retirement of acting assistant surgeons of the United States Navy at the age of 70 years. *Bills Introduced:* S. 3238, introduced by Senator Wheeler,

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Montana, proposes to enact a "Federal Building Workmen's Compensation Act." The bill provides that every contract entered into with the United States or any executive department, independent establishment, agency or instrumentality thereof for the construction, alteration or repair of any public building or public works shall contain a provision requiring the contractor to provide adequate workmen's compensation insurance for employees on the work who may come within the purview of the workmen's compensation laws of the state in which the work is to be performed. In case of employees not coming within the purview of the workmen's compensation act of the state in which the work is performed, the contractor shall, with respect to the injury or death of such employees, provide liability insurance pursuant to the Longshoremen's and Harbor Workers' Compensation Act. H. R. 8805, introduced by Representative Sirovich, New York, proposes to enact an act "to prevent the manufacture, shipment, and sale of adulterated or misbranded food, drugs, nonalcoholic and nonintoxicating beverages, and cosmetics, and to regulate traffic therein; to prevent the false or fraudulent advertisement of food, drugs, nonalcoholic and nonintoxicating beverages, and cosmetics." H. R. 8835, introduced by Representative McCormack, Massachusetts, proposes to provide for the deductibility, for the purposes of income tax, of charitable and other contributions by corporations.

Pan American Medical Congress.—The general scientific assembly of the Pan American Medical Association was held on board the *Queen of Bermuda* en route to the West Indies and Brazil, July 6-11. Among speakers announced in the program were:

Dr. Lewellys F. Barker, Baltimore, Treatment by the General Practitioner of the More Common Diseases of the Nervous System.

Dr. Morris Fishbein, Chicago, Our Changing Times: A Study of the Significant Advancement in the Nature of Medical Practice and of Current Tendencies in Social Medicine. Also Fads and Quackery in Healing: An Analysis of the Evolution of Charlatanism and an Exposé of Current Tendencies in Quackery.

Dr. Russell M. Wilder, Rochester, Minn., Clinical Significance of Recent Discoveries of the Metabolic Function of the Anterior Lobe of the Pituitary.

Dr. Foster Kennedy, New York, Relationship of Neurology and Psychiatry to General Medicine.

Dr. Varaztad H. Kazanjian, Boston, Various Deformities of the Face, with Methods of Treatment.

Dr. Charles C. Dennie, Kansas City, Mo., Heat in the Treatment of Syphilis.

Dr. William D. Haggard, Nashville, Tenn., What Can We Do to Lower the Mortality from Appendicitis?

Dr. Fred H. Albee, New York, Bone Graft in Repair and Cure of Disease.

Dr. Joseph Jordan Eller, New York, Diagnosis and Treatment of Cancerous Skin Lesions.

Eighteen sections were to hold meetings on shipboard. Other meetings were to be held in Rio Piedras, Puerto Rico, and in Rio de Janeiro and São Paulo, Brazil, with addresses by physicians of the cities visited. Dr. Chevalier Jackson, Philadelphia, is president of the association and Dr. Joseph Jordan Eller, New York, director general.

Fraudulent Solicitors.—It is reported that a man calling himself "Dr. Al Thompson" and "Dr. A. G. Thomas'" has been writing checks on physicians in North Carolina and Virginia. He arranges a visit ostensibly to sell instruments, and on his departure, check books, prescription forms, hospital reports and personal letters are missing. This man is about 40 years of age, 5 feet 8 or 9 inches tall, weighing about 160 pounds. He is red faced and wears heavy glasses and a brown-gray suit and hat. A physician from Langhorne, Pa., reports a man calling himself D. A. Thompson and claiming to represent the "Associated Importing Factory, 37 West Twenty-Sixth Street, New York," selling desk blotters and felt chair covers. The physician paid him $6, but the articles were never received. Investigation revealed that there is no such address. From Jasper, Ala., comes the report of a man giving his name as Karter and claiming to be the head of Karter Surgical Service Company of Birmingham. Instruments valued at $35 were given to the man to be repaired and the work paid for. When the instruments were not returned, a visit was made to the address in Birmingham, which was found to be a vacant lot. No one in the neighborhood had ever heard of "Karter." This man is described as a dark skinned, smooth shaven person about 5 feet 6 inches tall. He is said to weigh about 130 pounds and to have brown eyes. He claims to have worked for Pfau and Kny-Shearer in New York, is about 30 years of age, knows instruments and tells a plausible story. The St. Louis Medical Society reports that a man who used the name Garrison and introduced himself as a brother of the late Dr. Fielding H. Garrison of the Welch Medical Library, Baltimore, called on the society's librarian. He told of an automobile accident and a fine and asked for a small loan to enable him to get home.

Dr. Frederick Russell Resigns as Director of International Health Division.—The resignation of Dr. Frederick F. Russell as director of the International Health Division of the Rockefeller Foundation and the appointment of Dr. Wilbur A. Sawyer, associate director, to succeed him has been announced. Dr. Russell will retire September 1, having reached the age limit. He graduated from Columbia College of Physicians and Surgeons in 1893, and began his career as a member of the Medical Corps, U. S. Army, in 1898, advancing through the various grades to that of colonel in 1917. He resigned in 1920. He was curator of the Army Medical Museum, Washington, D. C., from 1907 to 1913, and also instructor in bacteriology and clinical microscopy at the Army Medical School, where he performed distinguished service in developing and producing the typhoid vaccine which the army has used with great effectiveness since that time. Colonel Russell also devised a culture medium which greatly simplified the identification of the typhoid bacillus. He was professor of pathology and bacteriology at George Washington University School of Medicine from 1909 to 1913 and for the following year lecturer in tropical medicine at the New York Post-Graduate Medical School and Hospital. From 1915 to 1917 Dr. Russell was chief of the board of health laboratory in Ancon, C. Z., and during the World War was in charge of the division of infectious diseases and of the laboratory service of the surgeon general's office, U. S. Army. From 1920 to 1923 he was director of the public health laboratory service of the International Health Board, and since 1923 has been general director of the board. In 1919 he received the Distinguished Service Medal. Recently he was named lecturer on preventive medicine and hygiene and epidemiology at Harvard Medical School, Boston. Dr. Sawyer, a graduate of Harvard Medical School, 1906, has been associated with the International Health Division since 1919, having been associate director since 1927. From 1908 to 1911 he was medical examiner at the University of California; director of the Hygienic Laboratory, 1910-1915, and secretary and executive officer of the California State Department of Health, 1915-1918; lecturer in hygiene and preventive medicine, 1914-1916, and clinical professor in the same subject at the University of California Medical School, 1916-1919. He served during the World War and afterward in the surgeon general's office, Washington, D. C., in the control of venereal and communicable diseases. From 1919 to 1922 Dr. Sawyer directed a campaign against hookworm in Australia and was adviser in public health to the Australian ministry of health from 1922 to 1924, assistant regional director for the East, 1923-1924, and director of the public health laboratory service of the international health board, 1924-1927. Dr. Sawyer was also a member of the West African Yellow Fever Commission of the Rockefeller Foundation in 1926 and since 1928 has been in charge of the foundation's Yellow Fever Laboratory in New York.

Government Services

Civil Service Commissions

The U. S. Civil Service Commission announces open competitive examinations for the positions of medical, associate and assistant medical officers, the applications to be on file with the commission not later than July 29. To be eligible, applicants must qualify in at least one of the following optional branches and must state in their applications the branch or branches desired: cardiology; cancer diagnosis and treatment; eye, ear, nose and throat; urology; internal medicine and diagnosis; neuropsychiatry; pathology and bacteriology; roentgenology; surgery (general or orthopedic); tuberculosis; venereal disease (clinical or public health), and general practice (associate grade only). For medical officer, the salary will be $3,800 a year; for associate medical officer, $3,200 a year, and assistant medical officer, $2,600 a year. These salaries are subject to a deduction of 3.5 per cent toward a retirement annuity. Further deductions are also provided for, depending on the service. Competitors will not be required to report for examination at any place but will be rated on their education and experience on a scale of 100, such rating being based on the sworn statements in their applications and on corroborative evidence. In addition to having certain qualifications, persons selected for appointment must pass a physical examination given by a federal medical officer. Application forms may be obtained from any first class postoffice, from the U. S. Civil Service Commission, Washington, D. C., or from the U. S. Civil Service district office in any of the following cities: Atlanta, Boston, Chicago, Cincinnati, Denver, New Orleans, New York, Philadelphia, Seattle, St. Louis, St. Paul, San Francisco, Honolulu, San Juan, P. R., and Balboa Heights, C. Z.

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Foreign Letters

LONDON

(From Our Regular Correspondent)

June 22, 1935.

Report of Committee on the Reform of the Curriculum

In the discussions that have gone on for some time in this country among teachers, students and physicians there has been general agreement that the curriculum is overloaded. Students have to spend too much time on subjects of no value to them in their subsequent careers as physicians. The General Medical Council, the body appointed by the government to control medical education and medical examinations, has now expressed its views. A year ago it appointed a committee to consider the information and proposals received by it for the revision of the curriculum. The report of the committee has now been made and the council has ordered that it should be circulated to the licensing bodies and deans of the medical schools. The systems of medical education vary widely in different countries, but there is no evidence that a higher standard at qualification is obtained anywhere else or indeed that other countries are satisfied with their own methods. The committee holds that medical education will be best advanced by developing and improving the existing system. There does not appear to be an appreciable body of criticism of the main principles of the present curriculum, as, for example, its length, the chief subjects required, or the order in which they should be studied. An increase of the present length (five years) would add to the financial burden of medical qualification. The standard at qualification can be improved without lengthening the period by raising the requirements at entry and expending the time available to fuller advantage.

Before admission to the medical curriculum proper an examination has to be passed in general education and in the preliminary scientific subjects. The curriculum proper begins with the study of anatomy and physiology. Registration as a medical student takes place at this point, but not before the age of 17. The committee agrees with the opinion that the medical curriculum proper should not be begun before the age of 18, partly to ensure sufficient general education and partly to await due maturity of mind. The standard of general education should be at least equal to that for the other learned professions and not below that of matriculation for the universities. It should not cease at too early an age and its present level should be raised.

THE PRELIMINARY SCIENTIFIC SUBJECTS

Much of inorganic chemistry has no special educational merit and is not of particular value to the medical student. The omission of such matter would enable organic chemistry also to be taken in the preliminary course and the student at about the age of 18 could pass an examination in chemistry and physics that would satisfy the council and enable him to enter on the medical curriculum proper without further examination in these subjects. Biology is a valuable introduction to the study of anatomy and physiology. It should be permissible for the course to begin, as at present, before registration, but the examination in it should be taken some time after registration and its study should be continued into the subsequent period.

THE MEDICAL CURRICULUM PROPER

The subjects fall into two main groups: the professional scientific, occupying the first two years and the clinical, occupying the final three years. The student should not pass to the second group until he has proved his knowledge of the first by passing an examination. Instruction in applied anatomy and physiology should be continued during the period of clinical studies. There has been considerable criticism of the teaching of anatomy; that it is taught in too great detail and sometimes by teachers not in touch with its clinical applications, and that it is taught on the assumption that the student is to become a professional anatomist. The committee holds that while these criticisms have some foundation they are less true now than they were some years ago. The committee recommends that the vocational aspects of anatomy be made more prominent by beginning the introduction to the clinical subjects in the second year. Similar criticisms have been made as to the teaching of physiology, but they are less emphatic. It is said that in some schools too much attention is paid to physiology of little vocational value. The committee is not satisfied that this criticism is in general justified. It recommends that physiology and clinical medicine be brought into closer union, especially by continuing physiology into the clinical years and by associating clinical teachers with its teaching. Instruction in the principles of genetics should be given at this stage. Introductory clinical subjects should be taught throughout the second year. These include methods of clinical examination—use of the stethoscope and ophthalmoscope and examination of body fluids—introduction to general pathology and bacteriology, and introduction to pharmacology.

THE PERIOD OF CLINICAL STUDIES

The period of clinical studies occupies the third, fourth and fifth years. Except for reasonable holidays, clinical instruction should be continuous throughout this period and applied anatomy and physiology should be continued by teachers of anatomy and physiology and the clinical teachers jointly. There should be a minimum period of one month's residence in a hospital for medicine and the same for surgery, and two months for obstetrics. Practical instruction should be given in minor operative surgery on the living. A medical clinical clerkship in the hospital wards should be held for six months and a surgical dresserships for the same period. Instruction should be given in dietetics, therapeutics and prescribing, physical therapy, principles of nursing, child welfare, psychology and radiology. Throughout the whole period of study attention should be directed to the importance of the measures by which health may be maintained and to the prevention of disease. During the later stages of the period, instruction should be given in the obligations under the national health insurance act and other acts of parliament and in medical ethics.

The Future of the Hospital System

The British Hospitals Association had decided to institute a committee of inquiry into the whole future of the hospital system. The association represents all the voluntary hospitals (hospitals supported by the voluntary subscriptions of the charitable for the benefit of the poor). The altered economic conditions and particularly the immense sum now spent by the state and the local authorities on social services have created new and serious problems for the voluntary hospitals. The rivalry of the rapidly increasing municipal hospitals, supported by public funds, and the need of middle class people for hospital treatment are the main problems. It may be said that the main object of the municipal hospitals is that no citizen shall suffer for lack of hospital treatment. Every one whose illness requires it is entitled to admission, but a graduated charge is made in the case of those who can pay. The London County Council, whose huge municipal hospital system has been previously described in THE JOURNAL, has appointed almoners for its hospitals, whose duty will be to interview entrants and assess the contributions they are to make toward the cost of their maintenance and treatment, as has been done in recent years in the voluntary hospitals. With regard to the competition of municipal with voluntary hospitals, an important point is that the former, with public funds behind them, can often acquire better equipment than the latter.

For persons of the middle class, neither of these hospital systems has been designed or are suitable, except that to a limited extent pay wards have been established for the middle class in some voluntary hospitals. The proposal is finding favor that an insurance system be established for them, so that by paying of a graduated amount yearly their families may have the right of treatment in hospitals under the supervision of their own physicians. Their position has been rendered more difficult by the industrial depression and high taxation, while at the same time medical treatment has become more elaborate and therefore more costly. It has been said that only the poor and the rich can get the best medical treatment—the former because it is provided for them in the voluntary hospitals, the latter because they can pay for it.

PARIS

(From Our Regular Correspondent)

June 7, 1935.

Effect of the Modified Armbruster Law on Foreign Physicians

Reference has been made in recent letters to student riots and protests made by many medical organizations against the ever increasing number of foreign physicians since the World War. The first attempt to check the influx from other European countries was the passage of the Armbruster law in 1933, which made it obligatory following enactment of the law for every one to be naturalized who desired to secure a state license to practice medicine in France or its colonies. The students who had already matriculated, prior to the passage of the law, were exempted from this requirement. Prior to the Armbruster law, a large number of students from Rumania had been allowed to take the examinations for state license without being obliged to have a French bachelor of arts degree or to pass the examinations of the preliminary medical year (physics, biology and chemistry). The latter exceptions to the standard requirements were the result of a treaty between the two countries dating back to 1860.

Since the passage of the Armbruster law, a larger number of foreigners than ever before applied for state licenses, because those already matriculated in the medical schools were exempt from the obligation of becoming naturalized.

One of the reasons for the influx of foreign medical and dental students during recent years is that the number of such students has been greatly limited not only in other European countries but also in the United States. Other students have been obliged to leave their native countries because of religious or political reasons. Although France has always been very hospitable in its attitude toward foreign students, physicians and dentists, the economic crisis through which the country is passing has caused these professions to feel keenly the competition of such a large number of foreigners.

The original Armbruster law of 1933 thus left too many loopholes, and it became imperative to check the influx of foreign physicians and dentists as well as that of students in these professions.

During the 1934-1935 session of the Paris Medical School, out of a total of 4,852 students there were 1,530 foreigners—nearly one third. Of these 1,530 foreigners, 689 matriculated as candidates for a state license to practice in France. Of the 1,530, 841 desired only the university diploma, which requires the same medical school examinations but does not demand the French bachelor of arts degree before admission to the medical school.

During 1933-1934, 585 state licenses were given by the Paris Medical School to French graduates, as compared to 125 state and 112 university diplomas to foreigners. During 1934 and the first six months of 1935, 669 state licenses were given to French and 136 to foreign students. One hundred and twenty-four university diplomas were granted. The latter constitute simply an honorary degree, often employed by foreign students in securing admission to schools in their own countries.

From 1925 to 1933, 2,376 diplomas were registered in the department of the Seine (in which Paris is situated), central police office. Of these 2,376 licenses to practice, 1,974 were issued to French citizens and 402 to foreigners.

The essential features of the new law as it affects foreigners and as just passed by the legislature are as follows:

In order to practice medicine or dentistry in France or its colonies, a state diploma and naturalization are now obligatory. The only exception to the latter is when those who desire to practice in France are citizens of countries that permit French physicians or dentists to practice without being naturalized. Even under these circumstances a parity must be established between the number of French physicians or dentists in a given country and the number of citizens of such a country who practice medicine or dentistry in France.

Any physician or dentist who has graduated from a foreign school and who wishes to obtain a French state license will be required to pass not only all the examinations of the French bachelor of arts degree but also those of the preliminary medical year (physics, biology, chemistry). Graduates of foreign schools who have complied with these requirements may enter the fourth year of the medical school but will be obliged to pass the examinations of the first three years. The medical school course has been recently lengthened from five to six years.

Foreign students will not be allowed to matriculate in any university unless they possess a French bachelor of arts degree and have passed the examinations of the preliminary medical year in France. No foreign or naturalized students, candidates for a state license, will receive any credit for work done in the medical or dental schools of his or her own country. No foreign student who has failed in examinations or has been refused admission in the medical or dental schools of his or her own country will be allowed to matriculate in a French university.

A special commission must verify every medical or dental diploma within six months after passage of the law. Every foreign physician or dentist who has been naturalized and has been granted a state license to practice shall be compelled to serve the same length of time (usually two years) in the army, navy or air corps as a French physician or dentist. If this requirement has been complied with, permission to begin practice immediately is granted.

If the physician or dentist, possessor of a state license, is exempted by the military authorities from active service, he or she can begin to practice only after an interval corresponding to the duration (two years) of the compulsory military service. This interval becomes double in length if on account of age the naturalized physician or dentist has been absolved on account of having passed the age limit of military service.

No naturalized physician or dentist, even though he has a state license, will be permitted to serve as an expert witness or as a public official until five years has elapsed from the date of graduation.

These requirements of military service do not apply to foreign students now engaged in medical or dental studies until after Dec. 31, 1940, or to foreign physicians or dentists who were practicing in France prior to passage of the law.

In the bill, as passed by the chamber of deputies (corresponding to House of Representatives), all physicians and dentists who were not French citizens were compelled to apply for naturalization papers within three months after passage of the law. This paragraph caused much anxiety among American and English physicians and dentists in France, the majority of whom practice in Paris.

A delegation headed by Dr. Edmund L. Gros, chief of the medical staff of the American Hospital of Paris, and Dr. Edward Ortion, Dr. Francis J. Wilson and Dr. William Davenport Jr., representing the dentists, called on the American ambassador, Jesse I. Straus, and explained to him the serious situation in which they would be placed if this law should be passed as it stands. Some of them have been in France for twenty or thirty years. Many have been volunteers in the French army and helped to organize during the war the American Ambulance Hospital, the American Field Service and other relief organizations.

The American Hospital of Paris, deprived of the American members of its staff, would have lost much of its American atmosphere and methods.

As the result of protests by the American and British ambassadors, the senate modified the chamber of deputies bill so as to exclude from compulsory naturalization and subsequent military service all foreign physicians and dentists who had been granted state licenses prior to the passage of the new law. The chamber of deputies, at the request of the minister of foreign affairs, Mr. Laval, accepted the change made by the senate.

The new law goes into effect immediately and it is hoped that in the near future it will greatly decrease the number of foreign physicians and dentists practicing in France.

BERLIN

(From Our Regular Correspondent)

May 13, 1935.

Therapeutic Management of the War Injured

The care of the war injured is a task of the federal government, which is delegated to a special department of the federal ministry of labor. This department provides for the needs of the war injured now living and also for the necessities of the dependents of the two million who lost their lives in the World War. A pension is not granted unless the reduction of the earning capacity caused by the war injury amounts to more than 25 per cent. As the number of the war injured who are drawing a pension is about 800,000 (THE JOURNAL, Dec. 1, 1934, p. 1721), it may be estimated that the total number of war injured ranges around 1,500,000.

Under the federal law pertaining to the aid to be given the war injured, only such persons can claim therapeutic care as can furnish evidence of having developed a *versorgungsleiden*, by which is meant all disturbances of health resulting from an injury suffered in the war service. The duty of deciding whether the disturbance of health is due to a service injury devolves on the pension board. In practice, certain distinctions with reference to the results of service injuries have come to be accepted. For example, a disturbance of health may have originated as a result of a service injury or it may merely have become exacerbated. Examples of the former are wounds and infectious diseases. In addition there are disturbances of health in which there is no causal but only a temporal connection with the war service. In such cases aid is likewise granted, although there is no legal claim for aid. Furthermore, a distinction is made between direct and indirect results of war injuries. A direct result, for example, would be a stiff knee-joint following a gunshot injury. An indirect result would be a flatfoot developing following the loss of the other leg.

Wherein the therapeutic care consists is exactly specified in the law. It comprises medical treatment, supplying with medicines and other remedies that may be needed to insure the success of the therapeutic aid or to alleviate the effects of the service injury. In addition, a course of treatment, including maintenance, in a sanatorium may be granted, or, if other forms of treatment do not yield adequate results, treatment in a spa may be approved. Blinded persons are given a dog specially trained to guide the blind. In some instances the krankenkassen with their comprehensive organization are called on to aid in the application of therapeutic care; but the reich has retained in its own hands a portion of the therapeutic care, since some of the forms of aid it is necessary to grant the war injured go beyond the customary performances of the krankenkassen. Most of the war injured are insured in the krankenkassen; but even though that is not the case the reich may make use of the krankenkassen in rendering aid to the war injured. The krankenkassen do not, however, aid in giving courses of treatment in spas and sanatoriums. These forms of treatment are used chiefly in service injury disorders in which one anticipates especially favorable effects from the specific virtues of the waters of certain health resorts; more particularly, stubborn neuralgias associated with loss of limbs, chronic inflammations of joints, rheumatic disorders, diseases of metabolism, certain forms and grades of tuberculosis of all organs, and disturbances of circulation. For the application of such forms of treatment the reich provides a number of special institutions, which are directed by medical officers. As a rule, the length of spa treatment is limited to four weeks, and sanatorium treatment for lung patients to from three to six months; but in exceptional cases the time may be extended. In addition, for the clinical observation and treatment of severely tuberculous, infirm and chronically ill war-injured there are four such federal institutions for patients whose condition is not amenable to domiciliary treatment. According to statements made in Munich by one of these medical officers, in 1932 6,161 patients were allowed treatment in spas or health resorts and 1,781 in sanatoriums.

Orthopedic aid is also administered without the mediation of the krankenkassen, by means of special orthopedic welfare centers. In 1921 orthopedic aid was granted to 23,892 persons with one amputated arm, to 191 persons with both arms amputated, to 53,869 with one leg amputated, to 1,084 with both legs amputated, to 3,803 persons who wear supporting apparatus, to 91,614 persons required to wear orthopedic shoes, and to 1,635 persons in need of wheel chairs or other form of vehicular aid. The range of usefulness of the orthopedic centers has remained unchanged. There are today thirty-two such centers, which, as of Oct. 1, 1933, had given aid to 236,642 war injured. No more recent statistics have been issued. The number of prostheses, their purchase, repair and length of wear, and their price range are governed by special provisions. In 1932 the following prostheses were furnished: 1,600 new artificial arms, 9,000 artificial legs, 60,000 pairs of orthopedic shoes, 600 wheel chairs and other vehicular aid, 2,650 rain coats, and 183,000 small orthopedic aids. In addition, 146,000 pieces of apparatus were repaired. The total sum expended was 9,000,000 marks ($3,600,000).

Abortion and Race Hygiene

The attitude of the German medical profession toward abortion is now unequivocally established on the basis of principles that have been set up by the government (THE JOURNAL, January 26, p. 331). While the discussions on the fundamental question may be regarded as closed, some important matters of detail have sprung up. It is surprising to learn from an article that appeared in the *Deutsches Aerzteblatt*, the official organ of the medical federations, that a half million abortions still occur annually in Germany. From the effects of abortion, at least 80,000 women have died either at once or within five years, from hemorrhages, septic disorders, or the like, which amounts to 16,000 a year. In addition, 300,000 women are said to have become ill because of the intervention, half to two thirds of whom fail to recover their health. Most of these abortions are carried out by underhanded quacks. A recent court decision has brought the question of abortion into an interesting connection with the eugenic principles of the national-socialist state. Strictly speaking, the eugenic indications for

abortion are absolutely rejected in Germany. However, not long ago the Hamburg eugenics court, on which devolves the task of enforcing the German sterilization law, declared that the interruption of pregnancy for eugenic reasons is exempt from punishment, assigning as the reason for such decision that a "racial emergency" exists. The court decided in one case in which the child would in all probability present hereditary defects for the interruption of pregnancy, in order that sterilization might be performed at once. Many jurists have condemned the decision of the Hamburg court on the ground that it exceeded the limitations imposed on judges. The court, nevertheless, has not yielded from its point of view, and, in the meantime, during the course of the year 1934, approved twenty-nine interruptions of pregnancy for eugenic reasons. It has even taken the unusual stand that a pregnancy can be interrupted without a court order in case either parent has been legally declared to present hereditary and transmissible defects. The Hamburg eugenics court, in justification of its decision, has declared that, for the sake of the continued existence and health of the German people, an unborn child that is likely to present hereditary and transmissible defects may be destroyed, even though thereby the legal regulations concerning abortion are violated.

Other eugenics courts, however, do not endorse the standpoint of the Hamburg court. For instance, the eugenics court of Berlin decided, with reference to a minor child with hereditary epilepsy, to postpone sterilization until six months after completion of the existing pregnancy. These questions are now being eagerly discussed in the special medical journals bearing on these problems.

Reforms in Sex Education

Dr. W. Gross, the director of the Rassenpolitisches Amt of the national-socialist party, has emphasized the need of considering sex education of the youth. He referred particularly to statements that Dr. Ockel had made in the official *Deutsches Aerzteblatt*. Dr. Ockel calls attention to the unfortunate conditions that have resulted from the fact that almost nothing has been done to solve this difficult problem. At present the number of illegitimate births shows a rapid increase. The present trend of developments is shown clearly by statistical data recently published by Dr. Harmsen, who supervises in Berlin a home for unmarried mothers among the educated classes. According to his annual report for 1933, of 206 mothers twenty-two belonged to the 14-20 age group. Most of these came to the home during the last third of the year 1933 in constantly increasing numbers; nor did the beginning of the year 1934 show any decrease, but rather the contrary. These mothers come frequently from very respectable families. In many cases it is uncertain which one of two or more comrades is the father of the child, so that "we have a state of affairs that we have seldom, if ever, observed during our period of activity." There appears to be no intention on the part of these young persons to establish a more permanent union or to enter into marriage relations.

It is not surprising that most urgent appeals for help have been heard. Physicians and teachers, especially, have been asked to cooperate. Parents must be induced to give their children early instruction in sex matters. A series of lectures should be given that would furnish them the basis for such instruction. The first instruction in sex matters should be given children between the ages of 5 and 10 years, and is primarily the duty of the parents. First instruction should consist of a simple presentation of the essential facts of procreation, propagation and birth. In the second stage of instruction, from the eleventh year up to puberty, the emphasis may be placed on the fact of procreation together with gradual enlightenment on the internal processes, in which the school and the home may work together toward a solution of the task. In the third stage, more detailed knowledge of sexual processes may be given, this being a problem of guidance of juveniles. These urgent appeals and the statistics cited reveal all too clearly what unpleasant conditions have developed in recent years, as the result, in part, of the lack of systematic instruction in sex matters.

VIENNA

(From Our Regular Correspondent)

June 3, 1935.

Celebration of the Sesquicentennial of the Vienna General Hospital

The celebration of the sesquicentennial of the founding of the Vienna General Hospital, during the last two weeks of May, was closely intertwined with the fifty-fifth International Postgraduate Course, and the Vienna and Austrian medical societies took the occasion to hold, during these two weeks, special sessions with unusually interesting programs, participated in by eminent scientists, including some from foreign countries.

The history of the General Hospital was presented in an address by Professor Neuberger. The festivities were held on a magnificent scale, under the auspices of the central government, the municipal authorities and the Vienna faculty of medicine. Twenty-six different nations were represented. The sesquicentennial celebration should have been held last year, since the General Hospital was opened Aug. 16, 1784; but the political disturbances of last summer made it seem advisable to postpone the celebration. Emperor Joseph II, who was known in history as the first liberal ruler, founded the General Hospital because he was deeply interested in public health work and in medical instruction. Where the General Hospital now stands, there stood at that time the so-called Gross-Armen-Haus, with seven large inner courts. This institution was altered and several additions were made, after the pattern of the institution in Leyden (Netherlands), to adapt it for the uses of a hospital. The new institution, which came to be known as the General Hospital, obtained as an annex a "medicinisch-praktische Lehrschule für Aerzte." At the request of the head of this "clinic," any patient in the hospital that was needed for instruction purposes was placed at his disposal. It was not until 1795, under the leadership of Professor Vetter, that a dissecting room was equipped. The "Leichenhaus" then established still bears in gold letters the motto "Indagandis sedibus et causis morborum" (for research of the sites and causes of diseases) and is still functioning with full force. Dr. Vetter laid the foundation for the magnificent collection of anatomopathologic specimens, which is now the pride of the institution. In 1801, the first vaccination against smallpox ever applied in Germany was performed in the Vienna General Hospital. The essential nature of typhoid was studied here for the first time. Among the important acquisitions that originated in the General Hospital were the development of obstetrics by Boër in 1810, in which he emphasized that birth is a physiologic and not a pathologic process; the first ophthalmologic clinic in central Europe, under Professor Beer (1812). The Vienna Medical School reached a high stage of development under Rokitansky as pathologic anatomist and Skoda as internist and diagnostician, around 1840. In the surgical clinic, Schuh performed in 1847 the first major operation under ether anesthesia. In 1848 Hebra became director of the dermatologic clinic; Semmelweis demonstrated that puerperal sepsis is an infection and showed how it could be prevented. In 1860 Türck made systematic examinations with a laryngoscope devised by Garcia and thus became the founder of laryngology; in 1868 experimental pathology was introduced by Stricker. Through Billroth, Vienna became the Mekka of surgeons (1867-1894). He resected the esophagus, extirpated the larynx and

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performed suprapubic prostatectomy and pylorus resection—operations previously unknown in Europe. Urology and cystoscopy, and likewise catheterization of the ureters, were practiced by Dittel in Vienna for the first time; orthopedics was advanced by Albert and Lorenz. The field of hypnosis and psychology was opened up by Krafft-Ebing, and psychoanalysis was discovered and developed by Freud. Cocaine as an anesthetic was introduced in 1884 by the ophthalmologist Dr. Koller (now in America). Otology was advanced by Pollitzer, rhinolaryngology by Hajek, and roentgenology by Holzknecht. Three men connected with the General Hospital have won the Nobel prize: Wagner-Jauregg, Bárány and Landsteiner. In the past three decades, the General Hospital has become too small for the needs of modern times. Six clinics have been moved to the new hospital, and thus sufficient space was secured for the clinics remaining in the old building. These have been completely modernized without disturbing the external appearance of the institution.

In connection with the celebration, an extensive exhibit, which gave a complete survey of the modern methods of treating and caring for patients, was organized. In the Museum of Natural History an exhibit was opened by the minister of public health, containing all the plans and presentations that affect the century and a half of history of the General Hospital; also old instruments, trephined skulls from prehistoric epochs, antique prescriptions and drugs, and, among other things, the first microscope, the first stethoscope, the first laryngoscope and the first ophthalmoscope.

Various societies held meetings simultaneously with the festivities. In the Verein für Psychiatrie und Neurologie, Professor Marburg and Dr. Suva discussed cavity formation in the spine following trauma. Dr. Scheinker presented a paper on observations on the spirochete in multiple sclerosis. Dr. Stengel discussed acute encephalitis.

At the special session of the Society of Internal Medicine, Professor Eppinger spoke on the pathology of inflammation. Professor Wenckebach delivered a long address on "Respiration and Circulation." Anemia and its dependence on the activity of the liver and the stomach was presented by Professor Hitzenberger. Anemia as the cause of dermatologic manifestations was considered by Professor Arzt. Professor Falta spoke on diabetes, and Professor Bauer on icterus and its nonoperative treatment; the latter discussed also hormones.

At the meeting of the Oesterreichische Krebsgesellschaft, Professor Fraenkel delivered the memorial address on "The Problem of Cancer." He said that cancer must not be conceived of as a local disorder but as a manifestation conditioned by the constitution of the patient, and that chronic irritants, which are often regarded as the cause of the carcinoma, have only a modest rôle. It is now possible, in a large percentage of cases, to establish the diagnosis in an early stage by means of serologic tests. Many other scientific societies held sessions during the festivities commemorating the founding of the General Hospital. At the closing session of the Gesellschaft der Aerzte, Professor Clairmont of Zurich spoke on the "Development of the Surgical School of Vienna During the Past Hundred and Fifty Years." He emphasized the invigorating effects on medicine that are traceable to this center of research. Every day of the two weeks was filled with entertainment: receptions instituted by the government and by the mayor of the city, unveiling of a monument to the first director of the hospital, inspection of exhibits and of hospitals in Vienna and vicinity, special performances in the theaters, and social events in honor of foreign guests.

Statistics on Marriages and Offspring

The recent edition of the Statistical Compendium of the Republic of Austria and the City of Vienna contains statistics that are of interest to physicians. Striking an average for ten years, it appears that only 0.1 per cent of the men entering matrimony are under 20 years of age, while only 0.1 per cent of the women are under 16. Six per cent of the brides are under 20. Only 8 per cent of the bridegrooms are under 25, although 25 per cent of the brides are under that age. The maximum of the men (more than 50 per cent) married between 25 and 30. Forty per cent of the women belong to this age group when they marry, which is also the maximum. Sixty-five per cent of the brides belonged to the 20-30 age group, while the same percentage of the bridegrooms belonged to the 25-35 age group. Of the men 1.5 per cent belonged to the 50-60 age group, while 0.4 per cent were past 60 when they went to the altar. On the other hand, only 0.5 per cent of the women belonged to the 50-60 age group, 0.2 per cent to the 60-70 age group, and less than 0.1 per cent to the group whose age was above 70. It is evident, therefore, that there is usually a difference of five years in the ages of the bridegroom and the bride. During the past fifteen years, to be sure, the average age of bridal couples has been somewhat higher, as the statistics for 1932 show, but the difference of five years in their respective ages has remained the same.

Further tables deal with the relative age of the parents and their children. It is shown that 5 per cent of all living legitimate children were the offspring of mothers who were more than 40 years old, and that 1.5 per cent of the fathers were more than 50 years old. Most children (about 35 per cent of all births) are born from three to ten years after the marriage of their parents, although 0.5 per cent of the children are born after their parents have been married twenty years or more. In the rural sections of the country, bridal couples are generally older than in the cities, and the age of the bride particularly is from one to two years greater than in the cities. In more recent years, however, the young people are marrying earlier. A drop in the birth rate is observable in most parts of the country. In Vienna, for example, the decline amounts to 50 per cent as against 1924, although in the provinces it is only from 15 to 22 per cent. The decline in the number of illegitimate births is only from 4 to 5 per cent, so that, in comparison with the legitimate births, they show an increase.

Prof. Dr. Benjamin Gomperz

Prof. Dr. Benjamin Gomperz, formerly a well known otologist and a favorite pupil of Professor Pollitzer, has died. Gomperz devoted himself especially to otology pertaining to young children. His textbook was translated into practically all cultural languages, and his otologic department in the Kinderkrankeninstitut in Vienna, in which he served for forty years, was the mekka of the physicians specializing in this branch. He published works also on anatomy and physiology of the organs of audition, on the testing of hearing in children, on the constitution in hardness of hearing, and on problems of heredity.

Prof. Dr. Emil Mattauschek

With the recent sudden death of Prof. Dr. Emil Mattauschek, a great man has passed on. He had attained the age of 66, forty years of which he had spent as a physician and director of the psychiatric-neurologic department of the General Hospital. He devoted himself even in his younger years to scientific research and to organization, and served, during the war, as head of the medical department of the army. Later he became the chief psychiatrist of the army. He was the collaborator of the Nobel prize winner Wagner-Jauregg in connection with the latter's researches on malaria therapy in dementia paralytica and was well known by reason of his own research on the anatomy of the central nervous system. He was also a well known court psychiatrist, his textbook being still widely used.

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ITALY

(From Our Regular Correspondent)

May 15, 1935.

Defense Against Gas Attacks

Major Ferri delivered recently, before the Sindacato Medici di Roma e Provincia, a lecture on the means of defense against gas attacks. He said that the first mask of modern type, in which granules of a solid substance were relied on to give protection against gas attacks, was devised in 1915 by Professor Guareschi. This model did not come into use, and the Italian army employed masks of layers of gauze impregnated with neutralizing solutions until in January 1918 the Guareschi idea was used in the form of the English respirator. The mask, which is essentially a filtration apparatus, still occupies first place among the means of individual defense. Various types of masks have been designed for the army and for the civilian population. They do not differ so much from the standpoint of quality or the capacity to resist a concentrated attack as they do from the point of view of duration of protection and the cost of manufacture.

The speaker pointed out the important things to be considered in a mask: its efficacy with reference to the concentrations of gas likely to be encountered in the field, its tight-fitting qualities, and the degree of comfort with which it can be worn.

The wearing of a mask reduces the physical and mental powers of the wearer, but suitable breathing will notably reduce the discomfort of its use. The use of this principal means of individual defense may be regarded with satisfaction.

In some types of chemical warfare, Major Ferri pointed out that it is necessary to use hermetically sealed apparatus that absolutely isolates the wearer from his environment, supplies him with the necessary oxygen, and absorbs the carbon dioxide of the expired air. Such apparatus may be one of two types, either with an oxygen reserve or a mechanism for the production of oxygen. The apparatus with a production system is based on sodium peroxide or on so-called solid oxygen, which releases compressed oxygen, pure or mixed with carbon dioxide. At present, protectors supplying compressed oxygen are preferable. The short period of effectiveness, averaging about an hour, the cumbersomeness and weight, the difficulty of handling, the cost, and other disadvantages prevent, for the present, the supplying of such protectors to the whole army. It may, however, be feasible to supply this apparatus to certain branches of the artillery, the corps of engineers and the sanitary service.

The need of protecting the entire surface of the body against the action of vesicant gases (dichlordiethylsulphide and dichloro-beta-chloro-vinylarsine) requires the use of special garments. These are made of an impermeable fabric treated in a special manner and consist of a hood, gloves and boots. The eyes and the respiratory passages are protected by the mask. These garments cause disturbances in the circulation and in the respiration. In summer the body temperature rises above normal, particularly in persons performing physical labor. A temperature of 38 C. (100.4 F.) is often reached, and a hyperthermia up to 39.2 C. (102.5 F.) has been observed. Attempts have been made to improve the qualities of these garments but without much success. Their use should be confined to specialists, and they should be used only for short periods.

The author spoke then of the organization of a collective defense against gas attacks, the composition of the air, the temperature, and the degree of humidity. In order not to exceed from 1.5 to 2 per cent of carbon dioxide or 17 per cent of oxygen, it is sufficient to provide 1 cubic meter of air per hour for each person. These amounts may be made available in hermetically sealed retreats or in retreats with filtered air. In many cases the hermetically sealed retreat will be sufficient, with or without regeneration of the air. The problems in providing a collective defense are complex, and practical economic questions must be taken into consideration. The physician has to insist to get his demands respected, for the civilian population has grown weary of using the gas mask—the fundamental means of gas defense.

Aid for Tuberculous Students

The directive council of the Federazione nazionale per la lotta contro la tubercolosi discussed recently plans for rendering therapeutic and prophylactic aid to students of the higher institutions of learning. In accordance with existing laws, these provisions appertain to the Opera universitaria, which, for the attainment of such ends, pays half of the premiums for the insurance of all students against tuberculosis and by means of its own sanitary bureau provides gratuitously for the periodic examination of the students. At the time of their matriculation and also at the beginning of each school year, all the students are subjected to a medical examination, the results of which are recorded in an individual health record book, which is brought down to date by the sanitary bureau of the Opera universitaria. Some of the more important morphologic and objective observations are recorded, such as the essential anthropometric measurements and the results of the radiologic examination of the respiratory apparatus. The record book is returned to the student on completion of his studies.

Students who are found to be affected with tuberculous disease and who are no longer insurable in an insurance organization may receive gratuitously ambulatory treatment either at the Opera universitaria or at the clinics. The director of the local Clinica medica, who presides also over the sanitary bureau, participates in the management of the Opera universitaria.

JAPAN

(From Our Regular Correspondent)

May 29, 1935.

The Effect of Storage on Rice

The rice control law that has been presented to the imperial diet created a great sensation. As rice is the staple food of the Japanese, the price has to be regulated by the government by controlling the quantity on the markets. The average crop of rice is about 300,000,000 bushels, and the surplus rice is going to be stored, under the new law. The sixteen warehouses for this purpose managed by the government have a limited capacity, which naturally causes from time to time disposal of the rice to provide for the new. Now comes the question of the nutritive value of old rice that has been one or two years in the warehouse. About this important matter there are two opinions, one holding that there is no difference and the other insisting that there is a great difference between the new and the old rice. The rice bureau of the agricultural and forestry department says that experiments with the old and the new unhulled rice made in feeding lovebirds show a great difference. The old unhulled rice caused symptoms of beriberi when the birds were fed only this rice, while they soon recovered their health when they began to be fed with the new rice. This fact shows that the vitamin content of the rice decreases as it grows old. Rice that is kept more than a year usually never sprouts and does not have so sweet and delicious a flavor as new rice. The price, therefore, is about one third that for new rice. On the other hand, Dr. Kagawa of Tokyo Imperial University opposes the opinion of the decrease in vitamin B and asserts that there is no difference between old and new rice if it is kept with the embryo bud about it. His experiments on pigeons have been elaborate. Professor Shimazono says that wormy and wet rice loses its embryo bud, which is essential for nourishment. Whether old and new rice are the same or not depends mostly on the method of storing it.

Dr. Fujimaki of the nutrition bureau of the hygienic laboratory of Tokyo says that the rice harvested in the fall begins to

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have its vitamin destroyed in the rainy season of the next year (June); 20 or 30 per cent and sometimes 60 per cent of the vitamin is destroyed by then. If rice is kept more than three years the vitamin will be entirely destroyed, he says. Dr. Akutsu, an expert in the commissary department of the army, reports that the vitamin of rice is generally destroyed at the rate of about half every year. In the army it is made a rule to eat up the rice between one rainy season and the next, for the rainy season causes a great change in various respects.

All this shows that there must be some difference in old and new rice, especially when it cannot be stored under ideal conditions. Mr. Nakamura, an expert of the agricultural office, says that even if the vitamin B of rice decreases as the days pass, the vitamin requirement can be easily supplied by other subsidiary articles of diet and produce no harm to the human body. The government is reported to be in a dilemma whether to adopt this new control law or not, from both the political and the health point of view, but many believe that the law will sooner or later be passed.

A Survey of the Blind

According to official report, the number of the blind throughout the country was 76,260 in 1932, or 11.67 persons per 10,000 of population, including about the same number of men and of women. The Central Association for the Relief of the Blind, having been granted a government appropriation, has begun the treatment of the blind, free of charge as far as possible. In Tokyo in April, ophthalmologists examined 622 patients, of whom 114 cases would recover their visual power if properly treated, while 355 cases were hopeless. The medical college hospital of Tokyo Imperial University reexamined 264 and announced that fifty-five will surely recover their sight and that for 195 there is some hope. Treatment is now being given 255 patients in hospitals free of charge. The real cause remains obscure why so many blind persons have not yet been examined thoroughly in Tokyo. Perhaps it is due to the ignorance or bad economic condition of the sufferers. The association will continue the work next year in much wider areas.

The Number of Physicians

According to the home office, the number of physicians registered in April was 76,516. The number of newly registered medical men was 3,294 in 1934. The registration fees amounted to 65,880 yen, each one paying 20 yen. The number of practitioners is 49,844, or 7.41 per 10,000 population. There should be an increase of about 3,000 physicians every year in the future.

Personals

Prof. Kaname Komuro, ex-president of Nagasaki Medical University, died April 18, aged 55. He was an authority on otorhinolaryngology. He resigned the presidency of the university and remained a professor. He was a man of lofty character.

Dr. Teisuke Komoto of Nagoya Medical University was appointed professor at Nagasaki Medical University and he is to be president before long. After his assumption of office, the university is expected to have a new chair of tropical diseases. As more than 100 medical students from the South Sea Islands have come to Japan recently, this university intends to send its graduates to the south hereafter.

Prof. T. Maeda of the Tokyo Imperial University, who is to attend the international surgical conference to be held in Cairo, is earnestly planning to have the next conference, in 1941, held in Japan. The year 1940 will be the 2,600th year of the foundation of the empire, and he wants to have at least one international medical conference here.

Prof. Dr. K. Mizoguchi has been appointed president of the Kyushu Medical College, succeeding Dr. Takayama, new president of Nagasaki Medical University.

Marriages

WILLIAM NICHOLAS FORTESCUE, Boston, to Miss Lottie Markham Hundley of Durham, N. C., June 5.

WILLIAM K. PURKS to Miss Mary Helen Kemper, both of Vicksburg, Miss., June 22.

ROBERT J. BOGAN to Miss Evelyn Frances Summers, both of Memphis, Tenn., June 1.

ROLLAND H. PRIEN to Miss Mary A. Frassetti, both of Gilroy, Calif., June 3.

FRED H. KRAMORIS to Miss Sylvia Heese, both of Milwaukee, June 1.

Deaths

Charles Andrew Fife ✠ Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1897; formerly associate professor of pediatrics, University of Pennsylvania Graduate School of Medicine; member and past president of the American Pediatric Society; served during the World War; aged 63; chairman of medical administration committee of the Babies' Hospital of Philadelphia; on the consulting staff of St. Christopher's Hospital and Frankford Hospital, Philadelphia, and the Burlington County Hospital, Mount Holly, N. J.; chief of the medical service of the Children's Hospital of the Mary J. Drexel Home; on the staff of the Presbyterian Hospital, where he died, June 15.

George Thomas Moseley ✠ Buffalo; New York Homeopathic Medical College, 1885; College of Physicians and Surgeons, Medical Department of Columbia College, New York, 1886; fellow of the American College of Surgeons; at various times on the staff of the Gowanda State Homeopathic Hospital, Helmuth, Erie County Hospital and the Millard Fillmore Hospital, Buffalo, J. N. Adam Memorial Hospital, Perrysburg, and the Batavia (N. Y.) Hospital; aged 70; died, June 22, of myocarditis and arteriosclerosis.

Sidney J. Burleson ✠ San Angelo, Texas; Maryland Medical College, Baltimore, 1905; past president of the Tom Green-Coke-Crockett-Concho-Irion-Sterling-Sutton-Schleicher Counties Medical Society; formerly secretary of the McCulloch County Medical Society; medical director of the Western Reserve Life Insurance Company; on the staff of the Shannon West Texas Memorial Hospital; aged 60; died, April 5, in a local hospital, of perforated gastric ulcer.

Howard Barton Bryer, West Warwick, R. I.; University of Maryland School of Medicine, Baltimore, 1909; formerly member of the state legislature, health officer and school physician; member of the examining board of the county during the World War; on the courtesy staff of the Rhode Island Hospital, Providence; aged 54; died, May 23, of cirrhosis of the liver.

Philip Densmore Amadon ✠ Monroe, Mich.; University of Michigan Medical School, Ann Arbor, 1926; fellow of the American College of Surgeons; formerly instructor of surgery at his alma mater; on the staff of the Mercy Hospital; aged 35; died, June 9, in the University Hospital, Ann Arbor, of pneumonia.

William H. Longmire, Elizabethton, Tenn.; Lincoln Memorial University Medical Department, Knoxville, 1914; member of the Tennessee State Medical Association; aged 44; died, May 16, in the Veterans' Administration Facility, Johnson City, of hypertensive heart disease and coronary occlusion.

Connell Edward Murrin, Scranton, Pa.; Jefferson Medical College of Philadelphia, 1904; member of the Medical Society of the State of Pennsylvania; served during the World War; on the staffs of the West Side Hospital and St. Mary's Keller Memorial Hospital; aged 60; died, June 5.

Joseph Thomas Herrick, Springfield, Mass.; University of the City of New York Medical Department, 1883; member of the Massachusetts Medical Society; veteran of the Spanish-American War; formerly on the staff of the Springfield Hospital; aged 75; died, June 2, of chronic nephritis.

Herbert William Ellam ✠ Gardner, Mass.; Harvard University Medical School, Boston, 1904; fellow of the American College of Surgeons; served during the World War; for many years on the staff of the Henry Heywood Memorial Hospital; aged 55; died, June 4, in Melrose Highlands.

Ephraim George Gray, Ludington, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1905; member of the Michigan State Medical Society; on the

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staff of the Paulina Stearns Hospital; aged 56; died, June 6, of cerebral hemorrhage and diabetes mellitus.

William Russell Garland ✠ Plymouth, N. H.; Dartmouth Medical School, Hanover, 1886; member of the Associated Anesthetists of the United States and Canada; president and medical director of the Emily Balch and Soldiers and Sailors Memorial Hospital; aged 70; died, June 5.

Alonzo Russell Jarman ✠ White Hall, Ill.; Chicago Medical School, 1922; past president and secretary of the Greene County Medical Society; proprietor of the White Hall Hospital; aged 41; died, June 26, in the Palmer Sanatorium, Springfield, of pleurisy with effusion.

Walter Cox ✠ Irvine, Ky.; University of Louisville Medical Department, 1912; secretary of the Estill County Medical Society; served during the World War; aged 46; died, June 6, in the Good Samaritan Hospital, Lexington, of pneumonia and miliary tuberculosis.

Frank Burr Marshall ✠ Muskegon, Mich.; Kentucky School of Medicine, Louisville, 1896; past president of the Muskegon County Medical Society; on the staffs of the Mercy and Hackley hospitals; aged 63; died suddenly, May 30, of angina pectoris.

Gustav Adolf Mausert, Los Gatos, Calif.; Hessische Ludwigs-Universität Medizinische Fakultät, Giessen, Hesse, Germany, 1899; formerly adjunct clinical professor of otology, Long Island College Hospital, Brooklyn; aged 62; died, June 1, of nephritis.

William A. Anderson, Glencoe, Ala.; Memphis (Tenn.) Hospital Medical College, 1906; member of the Medical Association of the State of Alabama; aged 55; died, May 26, in a hospital at Tuscaloosa, of hypostatic pneumonia and arteriosclerosis.

William Emile Cramer, Kansas City, Mo.; Hahnemann Medical College and Hospital, Chicago, 1888; Kansas City (Mo.) Hahnemann Medical College, 1906; aged 70; died, May 31, in the Wesley Hospital, of perforation of the gallbladder.

David Emanuel P. Reed, Russellville, Ind.; Kentucky School of Medicine, Louisville, 1898; member of the Indiana State Medical Association; served during the World War; aged 62; died, May 31, of cerebral hemorrhage.

Wallace Ainger Armour, Kansas City, Mo.; Kansas City Medical College, 1895; member of the Missouri State Medical Association; formerly member of the board of education; aged 67; died, June 14, of cerebral hemorrhage.

J. Stuart Wallingford, Paris, Ky.; Medical College of Ohio, Cincinnati, 1895; member of the Kentucky State Medical Association; on the staff of the W. W. Massie Memorial Hospital; aged 66; died, May 31, of angina pectoris.

Horace O. Sparks, Piedmont, Ala.; Atlanta College of Physicians and Surgeons, 1902; member of the Medical Association of the State of Alabama; aged 54; died, May 15, in Birmingham, of chronic nephritis and uremia.

Ernest Eugene Fankhauser, New Martinsville, W. Va.; Baltimore Medical College, 1902; member of the West Virginia State Medical Association; formerly member of the town council; aged 61; died, May 31, of arteriosclerosis.

John Milton Stevens, Hyde Park, Vt.; University of Vermont College of Medicine, Burlington, 1897; member of the Vermont State Medical Society; aged 62; died, June 17, in the Copley Hospital, Morrisville, of pneumonia.

Frank Gillingham Morrill ✠ Peoria, Ill.; Northwestern University Medical School, Chicago, 1908; served during the World War; on the staff of St. Francis Hospital; aged 54; died, June 9, of coronary thrombosis.

Harry Malcolm O'Brien, Cleveland; St. Louis University School of Medicine, 1918; served during the World War; aged 45; died, May 15, in the Charity Hospital, of pneumonia and tuberculous anal fistulas.

Richard Elmer Shurtz, Buhl, Idaho; Rush Medical College, Chicago, 1897; served during the World War; aged 64; died, May 21, in the Twin Falls (Idaho) County General Hospital, of heart disease.

Clyde Leigh Appleby, Peabody, Kan.; Kansas Medical College, Medical Department of Washburn College, Topeka, 1907; aged 56; died, May 29, in Wichita, of erysipelas and bronchopneumonia.

William Calvin Brice, York, S. C.; Medical College of the State of South Carolina, Charleston, 1926; member of the South Carolina Medical Association; aged 35; died, June 11, of heart disease.

Lawrence C. Barrett, Garner, Texas; College of Physicians and Surgeons, Dallas, 1905; member of the State Medical Association of Texas; served during the World War; aged 55; died, April 19.

Charles William Ampt, Cleveland; Medizinische Fakultät der Friedrich-Wilhelms-Universität, Berlin, Prussia, 1895; aged 64; died, May 21, in St. John's Hospital, of carcinoma of the stomach.

James David Jones, Sweet Water, Ala.; Kentucky School of Medicine, Louisville, 1893; member of the Medical Association of the State of Alabama; aged 68; died, May 24, of angina pectoris.

Richard Keith Dalrymple ✠ Pittsburgh; University of Buffalo School of Medicine, 1930; aged 39; died, May 31, in the Western Pennsylvania Hospital, of lobar pneumonia and encephalitis.

Torquato Martino, Hartford, Conn.; Regia Università di Napoli Facoltà di Medicina e Chirurgia, Italy, 1901; aged 60; died, April 22, of arteriosclerosis, chronic myocarditis and pneumonia.

Byron Douglass Pease ✠ Greenville, N. H.; University of Vermont College of Medicine, Burlington, 1887; past president of the Hillsboro County Medical Society; aged 74; died, April 3.

John Joseph Lettieri, Union City, N. J.; Fordham University School of Medicine, New York, 1917; served during the World War; aged 42; died, May 7, of pulmonary tuberculosis.

Thomas J. Colley ✠ Hominy, Okla.; University College of Medicine, Richmond, 1901; past president of the Osage County Medical Society; aged 64; died, June 4, of coronary thrombosis.

Carlo Antonio Gambotto, Bonny Doon, Calif.; Regia Università di Genova degli studi Facoltà di Medicina e Chirurgia, Italy, 1883; aged 79; died, May 24, of arteriosclerosis.

Abraham Daniel Murphey, Fort Pierce, Fla.; Miami Medical College, Cincinnati, 1887; aged 71; died, June 1, in the French Hospital, New York, of septicemia and endocarditis.

Frederick W. Kitzki, Milwaukee; Medizinische Fakultät der Friedrich-Wilhelms-Universität, Berlin, Prussia, 1898; aged 70; died, May 28, of coronary stenosis and embolism.

David Howard McKinley, Winchester, Ky.; Louisville and Hospital Medical College, 1908; served during the World War; aged 50; died, May 21, of a self inflicted bullet wound.

Jesse Mark Crawford, Alto, Texas; Barnes Medical College, St. Louis, 1894; member of the State Medical Association of Texas; aged 65; died, April 5, of lobar pneumonia.

William Lincoln Spoor, Redlands, Calif.; Long Island College Hospital, Brooklyn, 1886; aged 73; died, May 21, of prostatic hypertrophy, hypertension and uremia.

Numar M. Hebert, Covington, La.; New Orleans School of Medicine, 1869; member of the Louisiana State Medical Society; aged 88; died, May 2, of pneumonia.

Cassius Dudley Mansfield, Stanton, Ky.; Kentucky School of Medicine, Louisville, 1889; Louisville Medical College, 1889; aged 66; died, May 26, of heart disease.

Robert McGehee Exley, Pineora, Ga.; Atlanta College of Physicians and Surgeons, 1911; aged 48; died, April 22, of cerebral hemorrhage.

Robert Berdus Pruett, Indianapolis; Meharry Medical College, Nashville, Tenn., 1913; aged 64; died, April 30, of lobar pneumonia.

Matthias Marion Corwin, Ansonia, Ohio; Starling Medical College, Columbus, 1897; aged 63; died, June 4, of pulmonary tuberculosis.

John D. Carter, Grapevine, Ark.; College of Physicians and Surgeons, Dallas, Texas, 1906; aged 56; died, in April, of pneumonia.

George Swarz, Chicago; Bennett Medical College, Chicago, 1912; aged 64; died, June 13, in the Michael Reese Hospital, of uremia.

Alexander MacGregor, Springfield, Ohio; Columbus Medical College, 1892; aged 83; died, May 27, of chronic nephritis.

Bertrand M. Porter, Melrose, N. M.; Chicago Homeopathic Medical College, 1889; aged 68; died, May 9, of pneumonia.

Ira John Herr, Dayton, Ohio; Pulte Medical College, Cincinnati, 1894; aged 68; died, June 7, of chronic myocarditis.

John Henry Walling, Vinemont, Ala. (licensed in Alabama in 1889); aged 85; died, April 15, of chronic nephritis.

John Paul Emerson, Pittsburgh; University of Pittsburgh School of Medicine, 1935; aged 24; died, May 25.

Harry L. Coffman, Los Angeles; Medico-Chirurgical College of Philadelphia, 1901; aged 68; died, April 30.

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Bureau of Investigation

DIABETICINE

Another Fraudulent "Diabetes Cure" Debarred from the Mails

William Lee Thomas and Arthur S. Huyck have been engaged in the sale through the mails of a product fraudulently represented as a cure for diabetes, known as "Diabeticine." The two men did business under the trade name, first, "Illinois Diabeticine Company" and later "Artlee Remedy Company."

Investigation seems to show that Diabeticine is, apparently, nothing more than chopped-up wild carrot (popularly known as Queen Anne's lace). This puts the preparation in the class of ninety-nine out of every hundred quack "diabetes cures," namely, that of a diuretic. Practically every fake cure for diabetes has an irritating effect on the kidneys, so that by producing a greater excretion of urine, the amount of sugar in any given specimen will naturally be decreased, although the total sugar output may actually be increased. This fact and the further fact that every swindle of this kind calls for a rigid, although not a scientific, diet, explain the passing enthusiasm that sufferers from diabetes sometimes exhibit for

Every DIABETIC Should Read This Book

Learn about the amazing relief discovered by Specialist in private practice. Patients treat themselves. Pleasant, easy, very successful. No drugs. Enclose 10c to cover mailing of book.
Illinois Diabeticine Co., Dept. 10 P. O. Box 1314, Chicago

DIABETICS Relief Guaranteed
SUGAR FREE IN 48 HOURS
● Amazing Success! No costly or painful treatments, no drugs. Sugar removed in easy natural way. Specialist's book FREE, write
ILLINOIS DIABETICINE CO., Dept. 17
P. O. Box 1314, Chicago

products of this class. Incidentally, the Diabeticine fraud is not the only quack remedy for diabetes in which wild carrot appears. There was put out, first from Buffalo, N. Y., and later from Detroit, Mich., a nostrum "Melliticine," which also seems to have had Queen Anne's lace for its essential ingredient. While Diabeticine was said to be "derived from plants which, combined, have a highly therapeutic value in the treatment of diabetes mellitus," Melliticine was said to be "derived from certain plants . . . which have a highly therapeutic value in the treatment of diabetes mellitus."

On May 4, 1935, the Illinois Diabeticine Company and the Artlee Remedy Company were furnished with a copy of a memorandum of charges on file in the office of the Solicitor of the Post Office Department, calling upon these concerns to show cause on June 6 why a fraud order should not be issued. No one appeared in behalf of either concern on the date set for the hearing. The Hon. Karl A. Crowley, Solicitor of the Post Office Department, in a memorandum to the Postmaster General, sets forth the essential facts found by the postal authorities in their investigation of this fraud. According to the Diabeticine advertising, the product was said to be "derived from a plant which has a highly therapeutic value in the treatment of diabetes mellitus." It was set forth that "Diabeticine purges the blood of its excess sugar" and had, it was alleged, a "tonic action upon the pancreas" which, it was said, "arrests the disease." The Diabeticine Company further stated that it was firmly convinced that insulin "actually contributes indirectly to the further progress of the disease."

The exploiters of this pernicious nostrum, doubtless knowing full well that their stuff would not eliminate sugar from the urine, stated that "the occasional presence of sugar in the urine should not be misconstrued as inefficiency on the part of Diabeticine," because, according to the concern, the preparation "drives the excess sugar from the blood stream through the kidneys and out with the urine."

Diabeticine was analyzed both chemically and microscopically by the government experts. In addition, biological tests were made of the preparation in the Pharmacological Laboratory of the United States Department of Agriculture. Mr. Crowley reports in his memorandum that these tests proved that the preparation would not "purge the blood of its excess sugar" nor would it "drive the excess sugar from the blood stream through the kidneys." They found, also, that, contrary to the claims of the Diabeticine concern, the preparation would not revive or stimulate the islands of Langerhans of the pancreas to increased action.

Expert medical testimony in the case regarding the claims and representations made for Diabeticine was to the effect that the preparation would not afford any relief whatsoever, either immediately or gradually, in the treatment of diabetes. The only benefit to be expected from the treatment would be that which resulted from the diet prescribed, which benefit would be the same whether taken with or without Diabeticine.

Although the advertising and printed matter put out by Thomas and Huyck under the name of the Illinois Diabeticine Company gave the impression that they were specialists in the treatment of diabetes, the facts were that neither man had any medical training or was competent to pass on medical questions, and are reported to have admitted to the Post Office inspectors who investigated the case that they did not even know the ingredients of Diabeticine, which was being sold by them.

Testimonials, as is always the case in the exploitation of "patent medicine" frauds, were used in the exploitation of Diabeticine. One of the most glowing of the testimonials published purported to come from one W. L. Thomas. This is William Lee Thomas, one of the exploiters of this fraud. At the time the matter was investigated, the postal authorities report that they interviewed Thomas' physician, who stated that Thomas was at that time suffering from diabetes!

Solicitor Crowley's memorandum to the Postmaster General closes with these words: "A reading of all the literature in this case would lead the average person to believe that the preparation will, in fact, cure persons suffering from diabetes, whereas, according to the medical evidence before me, the preparation is wholly worthless in the treatment of that disease and may cause users to lose their lives as a result of their failure to adhere to the proper treatment and diet. The evidence before me shows, and I so find, that this is a scheme for obtaining money through the mails by means of false and fraudulent pretenses, representations and promises. I therefore recommend that a fraud order be issued against the names set forth in the caption of this memorandum."

Postmaster General James A. Farley on June 18, 1935, issued a fraud order against the Illinois Diabeticine Company, the Artlee Remedy Company, and their officers and agents as such. The order forbids the Postmaster at Chicago, Ill., to pay any postal money order drawn to the order of the Diabeticine outfit, and directs the local Postmaster to inform the remitters of such postal money orders that payment has been forbidden, and to return all letters and other mail matter directed to the Illinois Diabeticine Company, etc., to the senders, with the word "Fraudulent" written or stamped on the outside of such letters.

Principles of Practice.—The art of medicine is to observe, to correlate those observations, and to reason logically to conclusions that must finally become the true principles of practice. Those were the qualities that made Thomas great. His greatness lay in the principles upon which his practice was founded. It was upon right principles that he insisted, not upon this or that mechanical appliance.—Ridlon, John: Personal Remembrances of Hugh Owen Thomas, *J. Bone & Joint Surg.* **17:** 506 (April) 1935.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

JAUNDICE AND INTESTINAL PARESIS AFTER APPENDECTOMY

To the Editor:—A patient operated on for acute appendicitis developed jaundice and abdominal distention on the second postoperative day; it is now the seventh postoperative day and the distention continues. There is little, if any, peristalsis. Peritonitis is questionable. He is restless and mildly delirious. Duodenal drainage and venoclysis were instituted from the start. What good or harm, if any, might come from the use of atropine or strychnine, with especial regard to the effect on intestinal paresis? It is my understanding that atropine paralyzes the vagus endings and would be contraindicated when one is trying to maintain or stimulate peristalsis; also, my impression of strychnine is that it acts only on the spinal centers and exerts no tonic effect on the autonomic sympathetic nervous system. What is your opinion as to the wisdom of morphine when there is no pain and paralytic ileus threatens? Does scopolamine added to morphine usually act as a better cerebral sedative in toxic delirium than the morphine alone? What is your opinion about bromides, chloral, paraldehyde and phenobarbital as better mental sedatives than morphine in toxic delirium? Please do not publish my name.

M.D., Texas.

ANSWER.—Following operation for appendicitis, jaundice may be due to phlebitis, infection through the portal vein, the systemic circulation or the lymphatics, with metastatic abscesses in the liver.

Extension along the lymphatics may rarely produce liver abscess formation directly but it may cause obstruction of the common duct because of enlarged glands compressing the common duct, with jaundice, and perhaps be followed by infection extending up the biliary system.

Jaundice may result from a pyemia or septicemia as a toxic or infectious hepatitis.

A local peritonitis or phlebitis in the region of the infected appendix may be the source of any of the foregoing conditions.

The peritoneum may be able to care for a moderate amount of infection but, in the event of local abscess formation, surgical drainage is indicated.

The symptoms described of a paralytic ileus with or without a local peritonitis call for fluids and duodenal drainage.

Atropine is contraindicated, while certain drugs may be of value.

Physostigmine stimulates peristalsis. Experimental work has shown that in combination with solution of pituitary the results are better than with either drug alone. Some surgeons consider solution of pituitary dangerous because of its rapid action, while others use strychnine with physostigmine to stimulate peristalsis.

Strychnine increases the tone in both plain and striped muscles but alone is of little value in intestinal distention. Ephedrine is reported to be of value in paralytic ileus and is also of value in maintaining the blood pressure following operation.

Morphine quite definitely increases intestinal tone and segmental peristalsis but delays propulsive peristalsis in the colon. Morphine is indicated both in the prevention and in the treatment of paralytic ileus, as it maintains the tone in the muscle and tends to prevent the serious effects of dilatation. It is given for this beneficial effect in the absence of pain. Hypertonic sodium chloride solution either intravenously or as a retention enema is of great value in paralytic ileus. Morphine usually allays a toxic delirium but may occasionally increase it.

Scopolamine depresses the terminations of the same nerves as atropine, but it differs in depressing both the cerebrum and the respiratory and vasomotor centers in the medulla. On account of the pronounced susceptibility of certain persons to the action of scopolamine, it should be given cautiously. Owing to the depressing action on the respiratory center, morphine and scopolamine should be limited to small doses, although they act well when given together either as a cerebral sedative or for pain. However, large doses of scopolamine and occasionally morphine may actually increase restlessness and are contraindicated in severe toxemia.

In the absence of pain, for which morphine is the best sedative, other drugs are often better either alone or combined with it for toxic delirium.

The bromides depress the central nervous system and in mild excitement or nervousness are decidedly helpful, but feeble compared to morphine, chloral hydrate, paraldehyde or the barbital group.

Chloral hydrate has no analgesic action. It may weaken the heart, lower the blood pressure and depress the respiratory centers. It should be given cautiously, and in toxic conditions it is usually avoided.

Paraldehyde resembles chloral hydrate in its action on the nervous system but is not so depressing to the heart. It is ordinarily considered a reasonably safe sedative in a toxic delirium.

Phenobarbital is of value in certain stages of mild delirium, but if large doses are required it may produce an uncontrolled physical restlessness. It is not free from danger, especially in low blood pressure or in persons with arteriosclerosis, and, like other drugs, it should be chosen only when the organs of its elimination are not badly damaged.

In severe toxemia, any drug should be given with great caution.

PHOSGENE AND OTHER POISON GASES

To the Editor:—The Query and Minor Note on "Phosgene Poisoning" (THE JOURNAL, July 13, p. 140) gives an excellent description of the characteristic symptoms, signs and pathologic changes produced after a prolonged exposure to an atmosphere known "to be saturated with a heavy concentration of phosgene." However, it does not discuss the following possibility, about which I should like to be informed: Suppose that a person has been exposed for some time to a contaminated atmosphere of unknown chemical composition and death occurs from one to three days later, presenting the characteristic symptoms, signs and pathologic changes stated in the note. Can it be said with reasonable certainty that the atmosphere to which the person had been exposed contained a dangerous concentration of phosgene, or are there any other gases that will produce the same effect? Please omit name.

Ph.D., New York.

ANSWER.—There are many other gases that could produce essentially the same type of pathologic effect as phosgene gas. Among these might be mentioned chlorine, chloropicrin, chloromethyl, chloroformate, trichloromethyl and phenyl carbylamine-chloride, or combinations of these. As a result, unless it was definitely known that phosgene gas was present, it would be extremely difficult to say which of these gases, if present, was responsible; all have their effect on the alveoli and small bronchi of the lungs, which would be followed by lung edema. There are, however, a few clinical signs at the beginning that might be useful in determining the nature of the gas. With chlorine gas the concentration would have to be much stronger, the effect on the eyes and upper respiratory tract would be more marked, and the appearance of the edema would be somewhat delayed.

Chloropicrin, like chlorine, would cause a more pronounced effect on the eyes and the upper respiratory passages. It would also cause greater sensory irritation to the upper respiratory passages, and the pain in the chest would be more pronounced and there would probably be attacks of vomiting.

EFFECTS OF HUMIDITY

To the Editor:—Can you give me any information or refer me to any literature with regard to the effect of high humidity on workers in industrial plants? In a local textile mill an attempt has been made to raise the humidity in certain processes from 55 to 65 per cent, the temperature remaining at from 72 to 75 F. The employees complain bitterly of the increase, claiming that acute nose and throat infections are much more common at 65 per cent, and many more than usual have complained of muscular pains in various locations. Any information you can give me on this subject will be appreciated.

ARTHUR L. KINNE, M.D., Holyoke, Mass.

ANSWER.—"Just what the optimum range of humidity is is a matter of conjecture. There seems to exist a general opinion, supported by some experimental and statistical data, that warm, dry air is less pleasant than air of a moderate humidity, and that it dries up the mucous membranes in such a way as to increase susceptibility to colds and other respiratory disorders."

"For the premature infant, a high relative humidity of about 65 per cent is demonstrably beneficial to health and growth, and according to Huntington this seems to be the case for adults also. All of these studies indicate that the optimum humidity must always be considered in combination with temperature."

"Until more exact information is secured, it would be desirable to restrict the comfort zones to the range of relative humidity employed in the comfort zone experiments; namely, 30 to 70 per cent. Relative humidities below 30 per cent may prove satisfactory from the standpoint of comfort, so long as extremely low humidities are avoided. From the standpoint of health, however, the consensus seems to favor a relative humidity between 40 and 60 per cent."

"Dry air produces an excessive loss of moisture from the skin and respiratory tract. Owing to the cooling effect of evaporation, higher temperatures are necessary, and this condition leads to discomfort and lassitude. Moist air, on the other

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hand, interferes with the normal evaporation of moisture from the skin and, again, may cause a feeling of oppression and lassitude, especially when the temperature is also high."

"In the comfort zone experiments of the A. S. H. V. E. Research Laboratory, the relative humidity was varied between the limits of 30 and 70 per cent approximately, but the most comfortable range has not been determined. In similar experiments at the Harvard School of Public Health, a relative humidity of 70 per cent was found to be somewhat humid in winter by about half of the subjects who were stripped to the waist, even when the dry bulb temperature was 70 F. or less. In summer a relative humidity of 30 per cent was pronounced a little too dry by about a third of the subjects wearing warm weather clothing. So long as the temperature was kept within proper limits, the majority of the subjects were unable to detect sensations of humidity (i. e., too high, too low, or medium) when the relative humidity was between 30 and 60 per cent. This is in accord with studies by Howell, Miura and others."

In quoting this material from the 1935 "Guide" of the American Society of Heating and Ventilating Engineers, it is the intent to record the impression that humidity from 55 to 65 per cent is unlikely to promote nose and throat infection and instead that such conditions are much more likely to arise when humidities are low and temperature correspondingly high. Furthermore, in this situation involving humidities and temperatures a third most important factor in comfort is air motion. Given even a moderate amount of movement of the air, a relative humidity near 60 per cent at 72 F. may not be regarded as direful.

Following are further references:

Howell, W. H.: Humidity and Comfort, Science Press, April 1931.
Miura, U.: Effect of Variation in Relative Humidity upon Skin Temperature and Sense of Comfort, *Am. J. Hyg.* **13:** 432 (March) 1931.
Mudd, Stuart; Grant, S. B., and Goldman, A.: Reactions of the Nasal Cavity and Postnasal Space to Chilling of the Body Surface, *J. Exper. Med.* **34:** 11 (July) 1921.
Reactions of the Nasal Cavity and Postnasal Space to Chilling of the Body Surfaces: Concurrent Study of Bacteriology of Nose and Throat, *J. Infect. Dis.* **29:** 151 (Aug.) 1921.
The Etiology of Acute Inflammations of the Nose, Pharynx and Tonsils, *Ann. Otol., Rhin. & Laryng.* **30:** 1 (March) 1921.
Yaglou, C. P.; Drinker, Philip, and Blackfan, K. D.: Application of Air Conditioning to Premature Nurseries in Hospitals, A. S. H. V. E. T., **36.** 1930.
Huntington, Ellsworth: Weather and Health, Bull. 75, National Research Council, National Academy of Science, Washington, D. C., 1930.
Air: Hot and Humid Atmosphere, International Labor Office, Geneva, 1930, published by the World Peace Foundation, 8 West Fortieth Street, New York.

CONFECTIONERS' ITCH OR BAKERS' DERMATITIS

To the Editor:—A young woman who works in a bakery handling and selling bread and cakes came to me with a skin condition on her fingers. Two fingers on each hand had round, raised flat vesicles about 1 cm. in diameter, the borders of which appeared indurated and reddened. The vesicles dried in about twenty-four hours, leaving a raw, chapped and fissured skin, which itched. Is ringworm infection a likely diagnosis? Could this infection have come from the bread? Would this infection be more likely to involve skin with small unhealed cuts? How could the diagnosis have been made definite? Please omit name.

M.D., New York.

ANSWER.—Since early times bakers, pastry cooks and confectioners have been held to be liable to a wide variety of skin disorders. Modern research seems to show that "bakers' eczema" is caused not by any ordinary ingredient of the bread but by one of the so-called flour improvers, usually ammonium persulphate, sometimes calcium acid phosphate. In regard to the former, Australian reports show that in "allergic" persons as little as one part in a hundred thousand may cause an eczema. In regard to the latter, Prosser White found confectioners' self-rising flour very irritating in patch tests and attributed this to the presence of acid calcium phosphate, from 4½ to 6 pounds in 280 pounds.

Deliquescent compounds, such as salt and sugar, are unduly active when in crystals, dehydrating the tissues they touch. Packers of sweets as well as makers frequently have skin lesions on the hands. The French have written much on the subject of the "mal des confiseurs," the typical form of which is onychia, affecting chiefly the middle and ring fingers, but there are also cases of bullae and pustules without onychia. White gives a case of dermatitis from handling cinnamon-sugar, in which the cinnamon was found to be the causative agent.

Most writers accept the term "confectioners' itch" or dermatitis or psoriasis, but White holds that a distinction must be made between skin lesions that are merely incidental to certain occupations and those which are actually due to the occupation. An eczema can be called occupational with certainty only if at least one of the ingredients handled gives a positive result with the patch test.

These conditions are described by:

White, R. P.: The Dermatergoses or Occupational Affections of the Skin, ed. 4, London, 1934, pp. 252-259.
Bowen, J. T., in Diseases of Occupation, by Kober and Hanson, Philadelphia, P. Blakiston's Son & Co., 1916, p. 358.
Ullmann, Karl; Oppenheim, Moriz, and Rille, J. H.: Die Schadigungen der Haut durch Beruf und gewerbliche Arbeit, Leipzig, Leopold Voss **2:** 204, 1926.

ANXIETY NEUROSIS

To the Editor:—A white woman, aged 36, shows symptoms of nervousness, is easily tired, and has a sensation of choking or a tight feeling in the neck. She has occasional heavy and dull headaches, which previously were more severe, with pain starting in the supra-orbital region and radiating to the occiput. There is a slight burning sensation of the eyelids. The condition was slightly relieved by refitting of glasses eight months ago. There is no exact dizzy feeling, but sudden sinking sensations occur. Slight roaring sensations in the ear are aggravated by the slightest exeitement. She has a slight head cold, with soreness in the region of the posterior portion of the turbinates. The teeth are poorly repaired but there are no root infections. Tonsillectomy was done in 1933. There is a continuous sensation of phlegm in the throat but the patient is unable to cough it up. There is a sensation of tightness and choking in the throat, especially when the arms are raised over the head; also a sensation of tightness on swallowing. No coughing occurs except a slight hacking in an attempt to clear the throat of the sensation of phlegm. Tenderness is noted on pressure on the chest in the region of the third and fourth left ribs 4 inches from the midsternum. No hemoptysis has been observed. Shortness of breath occurs on exertion, and palpitation on excitation and exercise. The pulse is regular. There is no pain in the left axilla and arms. The appetite is poor but the patient must eat three times a day or the stomach feels upset. There is no flatulence or belching of gas. The bowels are regular, twice daily. There is generalized pain round the umbilicus. A sensation of deep pain occurs in the midabdomen when the patient stoops; this condition is aided slightly by the wearing of a tight abdominal girdle. The urinary system is normal. Menstruation started at the age of 12 and is regular every twenty-six days. There have been four normal pregnancies, the last one occurring a year ago. For the last three years, the patient states, one month menstruation has been normal and on alternate months it has appeared abnormal. At these times, she says, a heavy sensation of general ill feeling has been accompanied by swelling of the legs (varicose veins). In other words, the varicose veins are aggravated every alternate month. The patient is more nervous and the condition of the throat is aggravated. This month she complains of a bearing down sensation of the pelvic organs. This condition has been present at various other times. Sensations of itching of the skin have occurred at various times without apparent cause. There are no pathologic changes in the head. The thyroid is slightly enlarged (small simple goiter?). Examination of the chest and lungs gives negative results. There is slight pain on pressure over the cardiac area. There is a slight tricuspid murmur. The pulse rate is 78. Blood pressure is 128 systolic, 74 diastolic. The blood vessels are soft. There is definite tenderness in the region of the right costal margin or in the gallbladder area, probably caused by chronic cholecystitis. Pain is elicited on palpation of McBurney's point and also in the corresponding area in the left abdominal quadrant. Bimanual examination reveals backward displacement of the uterus, with a first degree prolapse. Definite tenderness of the appendix is elicited. The right ovary is normal; the left ovary is slightly cystic. There are marked varicosities in both legs. Please give me, from this meager history, your opinion as to the cause of the choking, sinking sensations. I am satisfied that the patient has a chronic infection of the gallbladder and appendix as well as a misplaced uterus and cystic ovary, but can her complaints be due to these ailments? A basal metabolism test was made two years ago and was said to be normal. Please state also your suggestions as to treatment.

M.D., Wisconsin.

ANSWER.—When one hears the story of such a multiplicity of more or less unrelated symptoms, one immediately suspects a functional rather than an organic disturbance. In such situations, painstaking diagnostic methods should be employed before an organic disturbance is definitely decided on, particularly when surgical intervention is associated.

In this case the definite departures from the normal consist of pelvic disturbances, a retrodisplacement with prolapse and a cystic ovary, varicose veins, and a slight thyroid hypertrophy without change in the basal metabolism. It is difficult to attribute the symptoms in this case to these sources.

On the other hand, all the subjective symptoms described fit into the picture of an anxiety neurosis or an effort syndrome.

The dizziness, choking and sinking sensations are commonly found in functional disorders. The fact that some of these symptoms are aggravated at the menstrual period is additional evidence of the functional basis.

Abdominal tenderness in the region of the colon is frequently encountered in the vagotonic and sympathicotonic types. This colon tenderness is often indistinguishable from tenderness of the appendix or gallbladder, and the differential diagnosis must be based on symptoms other than the tenderness.

The alternating character of the menses has been observed. This has been attributed to ovulation from alternate ovaries with a different corpus luteum response from each ovary.

Thus, in this case the "normal periods" are the result of ovulation from one ovary, while the "abnormal periods" are the result of ovulation from the other.

Any suggestions for treatment must assume that a definite diagnosis has been made, as the treatment must be wholly guided by the cause of the symptoms. With this picture, however, great care must be used to make sure that surgical intervention offers a fair hope of improvement. It has been found that such treatment, when it fails, usually leaves the patient worse than before.

GLANDULAR DISTURBANCE WITH ALTERED METABOLISM

To the Editor:—A woman, aged 39 years, height 5 feet 4 inches (163 cm.), weight 220 pounds (100 Kg.), a brunette, well educated, exceptionally brilliant and an efficient housewife, has two brilliant children, aged 10 and 5 years. Both births were normal. No miscarriages have occurred and no menstrual disturbances. The patient's appendix was removed in 1915. The tonsils were removed in 1922. Abdominal adhesions were operated on in 1931. Infected upper teeth were removed in 1933. The gallbladder was removed in March 1934. There had been no other sickness or operations. The patient states that she is in an extreme state of fatigue most of the time. She says that she just does not have the power to do the things she wishes to accomplish and that it is necessary for her to limit her movements and rest each day. If she exceeds a certain pace, she soon finds herself exhausted. She also states that she has pain around her heart. This pain is more or less severe and at times extends to the left shoulder, arm and forearm. These signs have been rather constant for a period of two or three years and have grown worse, especially since the gallbladder was removed. The pains come on at intervals and appear to be a part of the fatigue signs. Their severity varies. She states that when this pain is over her heart the heart labors and feels as if about to stop. Respiration is not much affected. However, she perspires or her skin becomes moist. Examination shows the patient many pounds overweight. Her general physical condition is good, except that she has a blood pressure far below normal: systolic, 92; diastolic, 64. The heart rate is 68. These readings are made from repeated studies over a period of time. The heart is normal in position and outline; the valves are intact; it is functioning normally. Rhythm is poor. There is an extrasystole. The force of the heart contractions is poor. I have seen the patient in these heart attacks. The pain is rather severe. The heart rate is slow and the force of contraction weak. Beats miss about every seventh one. Heat over the heart area gives relief. I have never given an opiate in this case. Glyceryl trinitrate and other heart stimulants do not appear to make any change. After these attacks the patient relaxes and falls asleep and after a few hours awakes in good condition. The diagnosis, made early, was gallbladder disease, probably gallstones, with anxiety neurosis (moderate). I assured the patient when the gallbladder was removed that I anticipated the heart signs and fatigue would clear up. Now that these have remained and are gradually growing worse, I am asking suggestions. Are low blood pressures found in neurosis of any degree? Or am I dealing with a mild coronary condition or a fatty degeneration of the heart? Please suggest any further study I might make in the case to arrive at a better diagnosis; also treatment, if any. Please omit name.

M.D., New Hampshire.

ANSWER.—The picture described in this question has all the marks of a glandular disturbance resulting in a disordered metabolism. In such a complicated affair the disturbance usually involves more than one gland.

There are a number of additional observations that might aid in arriving at a conclusion. It is important to know whether the overweight condition has always existed or whether it appeared suddenly following pregnancy or following acute infection or some other factor that may have disturbed a previously normal glandular metabolism.

The fat distribution might furnish some clue to the disturbing element, as would also the presence or absence of myxedema.

A determination of the basal metabolic rate is of primary importance.

The question states that there is no menstrual disturbance but it does not state the character of the menstruation or whether it has been in any way altered.

A hypothyroidism is suggested by the overweight, by the fatigue, and by the relatively slow pulse. This condition is usually associated, however, with a diminution of mental acuity and a diminution of the menstrual flow. Other signs of hypothyroidism not dealt with in the question are cold intolerance and a dry skin and hair.

A disturbance of pituitary function would account for the overweight, but this condition is not usually associated with excessive fatigue and with a normal menstrual function.

A diminished adrenal cortical function would account for the fatigue and low blood pressure but not for the overweight. A combination of factors must be considered.

The cardiac pain is doubtless due to a deficient coronary circulation; but it seems unlikely that this is on an organic basis or that any marked coronary disease exists, nor does it seem likely that fatty degeneration of the heart exists. Fatty degeneration of the heart, except as an immediate sequel to severe acute infection, is almost unknown as a pathologic entity, and fatty infiltration of the pericardium tends to increase the cardiac circulation rather than diminish it.

It is quite possible to have coronary pain as a result of low blood pressure. The possibility of an anemia that may contribute to the deficient coronary circulation is not determined by the question.

The carbohydrate metabolism may also play a part in the fatigue and pain in this case. Blood sugar determinations during the attack might prove helpful. An improper mobilization of sugar will result in a relative hypoglycemia, and fatigue or pain may ensue. The diet in this case is not dealt with and it is possible that the carbohydrate intake is too greatly restricted.

It is quite possible that an anxiety neurosis may be present. An anxiety neurosis frequently causes fatigue, pain and low blood pressure, but it will not cause the overweight and it is almost invariably attended by an elevation of the pulse rate. It seems unlikely that it will produce the whole picture in this case.

SO-CALLED ATROPHY OF BRAIN

To the Editor:—A patient of mine recently returned from a Chicago hospital where a diagnosis of primary atrophy of the brain, frontal lobe, was made and instructed that there was nothing to be done for her. The patient complains of severe headaches, which are almost constant but vary in severity. It has been necessary to use morphine in half-grain doses to obtain the slightest relief. Is there anything in the recent literature to throw light on this condition? Please omit name.

M.D., Michigan.

ANSWER.—Primary atrophy of the frontal lobe of the brain is not a clinical entity. Pathologically it is possible to get an atrophy of the frontal lobe in cerebral vascular disease, dementia paralytica, Huntington's chorea, cerebral neoplasm and Pick's disease. The latter is known also as heredocerebral degeneration. It was described for the first time in American literature by Hoedemaker and Matthews (*Arch. Neurol. & Psychiat.* **28**:1449 [Dec.] 1932). It is suggested that a careful neurologic examination be made with lateral stereoscopic and anteroposterior views of the skull. The optic fundi and visual fields should be examined. When all these data are assembled, one can give an impression as to the possible diagnosis. For the severe headache one may give 100 cc. of 50 per cent dextrose intravenously or 6 ounces of 25 per cent magnesium sulphate solution in a pint of lukewarm water as a retention enema. Morphine should not be used under any circumstances, because of its medullary effect. If a neoplasm is present, decompression or removal of the tumor should be done.

SIMULTANEOUS INOCULATION AGAINST DIPHTHERIA AND SMALLPOX

To the Editor:—I was asked to immunize against diphtheria 113 and vaccinate against smallpox 96 children of school and preschool age. I should appreciate it if you would be kind enough to let me know the following: 1. In immunization of children against diphtheria is it better procedure to test first all children 10 years of age or older with the Schick test? (For immunization I am going to use alum-precipitated toxoid.) 2. Is it possible to administer alum-precipitated diphtheria toxoid and vaccination against smallpox on the same day? (According to Dr. W. T. Harrison, "on account of the tendency of virus to localize at the site of precipitated toxoid injection, smallpox vaccination should not be done until the nodule following toxoid injection has disappeared.")

D. V. OGIEVSKY, M.D., Klickitat, Wash.

ANSWER.—1. It is desirable to Schick test children 10 years of age and older in order to determine who are susceptible and need immunization.

2. If no emergency exists it probably would be best at this time not to immunize against diphtheria and smallpox simultaneously.

SMALLPOX VACCINATION

To the Editor:—A child less than a year old has been unsuccessfully vaccinated three times. There is no question concerning the potency of the vaccine used or the method of vaccination. There is no possibility of acquired immunity, but the question does arise concerning natural immunity. How many unsuccessful vaccinations should be made before it is safe to assume that natural immunity exists? Please omit name.

M.D., Indiana.

ANSWER.—According to Heman Spalding, late chief medical inspector of the board of health of Chicago, "all who have not had smallpox are susceptible to vaccinia at least once. To this rule there is probably no exception. In an extensive experience, I have never met with one. The operation should

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be repeated until a successful result is obtained. To say a person is 'insusceptible to vaccinia' because several trials are negative is unjustifiable. I have known several to lose their lives because physicians had given this false information" (Pediatrics, by various authors, edited by Isaac A. Abt **6**:169, 1925). It appears as if a child may be temporarily insusceptible to vaccination. Sometimes many attempts at vaccination must be made before a typical take is secured. Spalding wrote that he had known eight, ten and in one case thirteen attempts at vaccination before success was obtained. There is no good ground for believing that failure of primary vaccination means immunity in the absence of a previous attack of smallpox.

USE OF CONVALESCENT SERUM—TRANSFER OF ALLERGY

To the Editor:—I have been unable to find satisfactory information dealing with the following questions: 1. Is there any danger in giving human convalescent serum at repeated intervals, say a month? 2. Is there any likelihood of transmitting allergic states in this manner? 3. Would it be more painful if the serum, in small doses, was given subcutaneously rather than intramuscularly? I am aware, of course, that the serum must be sterile and the Wassermann reaction negative, but I was wondering whether there was any danger from serum accidents and serum sickness when human serum was repeated at rather frequent intervals. Please omit name and address. M.D., Ohio.

ANSWER.—1. There is probably little danger in giving properly prepared and preserved convalescent human serum in proper doses subcutaneously or intramuscularly at intervals of say one month. It is true that cutaneous and other reactions have been observed after the injection of human serum at frequent intervals.

2. It is possible to transmit allergy passively by injections of human serum. For instance, the serum of a person sensitive to horse emanations (horse protein) may transfer such sensitiveness passively on injection into a second person.

3. Most likely subcutaneous injection of serum would be less painful than intramuscular.

MARRIAGE AND SYPHILIS

To the Editor:—A brother and a sister, aged 23 and 27 years, have had congenital syphilis with a plus four Wassermann reaction. They have each had about thirty injections of arsphenamine and probably about twenty injections of a bismuth compound. They still have plus Wassermann reactions. They haven't had any treatments for six months. The woman, who is to be married, wants to know if it is safe in the first place and if she needs any further treatments. She is in perfect health otherwise. Please give me your advice about further treatments in these cases. Kindly omit my name. M.D., District of Columbia.

ANSWER.—Much will depend, in this instance, as to whether the patients have had lumbar punctures. It is known that the Wassermann reaction in a case of congenital syphilis is slow in its response to treatment. If the patient has had reasonable antisyphilitic treatment the tendency is more and more to ignore the blood Wassermann reaction. If the lumbar punctures were negative, it probably would be well simply to give each one of the patients a course of bismuth salicylate injections intramuscularly, eight injections each, twice a year for the next year.

With the sister, if she marries and becomes pregnant, there would be no harm, certainly with the first one or two pregnancies, in giving her two short courses of bismuth salicylate injections during the pregnancy. She should not hesitate to marry. Of course, the disease is not transmissible to the prospective husband, and transmission of heredosyphilis is problematic and is looked on askance by most syphilologists.

TOLERANCE TO MORPHINE

To the Editor:—Is it possible to estimate or is there any average limit to the tolerance of morphine? In other words, given two patients, one taking 6 grains (0.4 Gm.) daily and the other taking, say 15 grains (1 Gm.) daily, can you tell me if it is necessary to produce the same sense of well being for the second patient to take that much more or is there a top limit to any individual's tolerance? I am trying to find out how to estimate how much morphine might be wasted in the "mental effect" in addicts. Please omit name. M.D., Tennessee.

ANSWER.—It is impossible to state the upper limit. The average may be placed at between 1 and 2 Gm. daily, though the dose may become as high as 4 or 5 Gm. and even exceed this figure. The addict finds it necessary to take an increasingly larger amount of morphine to produce the same degree of euphoria and to antagonize the withdrawal symptoms. As tolerance does not occur to the convulsive effects of morphine, this would set the upper limit to the dose that can be tolerated. Data are not available to state this dose categorically, because death usually occurs before this dose is reached.

HAZARDS OF WAX SPRAYING IN PRINTING INDUSTRY

To the Editor:—An inquiry has come to my desk as to the possible harmful results arising from wax spraying in the printing industry. We do not use this method at the Government Printing Office and therefore have no data on the subject. Certain investigations made in one of the larger printing plants in England seem to point to harmful results to workers, even to the extent that cancer may follow its use. Have you any data of investigation made along this line?

D. P. BUSH, M.D., Washington, D. C.

ANSWER.—According to the U. S. Bureau of Standards (Lewkowitsch: Chemical Technology and Analysis of Oils, Fats and Waxes, ed. 6, New York, Macmillan Company, 1923, p. 281) (1) printers' wax consists essentially of ozokerite, a natural bituminuous product, waxlike, occurring near petroleum springs. Ozokerite used in this country is obtained from Utah and from Poland. It is freed from asphalt and minerals and is then mixed with beeswax, paraffin, rosin, petrolatum, turpentine and burgundy pitch. No injurious action on the skin should follow contact with these substances. None of them are cancer producing. British printers' wax may differ from American and possibly may contain some of the carcinogenic agents that are present in the final products of tar distillation. It is well known that the oil pressed out in the final stage of paraffin production is carcinogenic (Heller, Imre: Occupational Cancers, *J. Indust. Hyg.* **12**:169 [May] 1930).

ANTIRABIC TREATMENT

To the Editor:—I have a patient who was exposed to rabies in December 1934. I gave him fourteen daily doses of an antirabies vaccine made by Jensen-Salsbery of Kansas City, which product he wished to take, the last injection being on Jan. 7, 1935. He took the vaccine without difficulty, except for rather severe local reactions. Recently he contaminated an abrasion on the fingers with saliva from a dog, which today developed rabies. He did not apply any antiseptic to the open lesion on the fingers but did use soap and water. The question is whether he should have another course of vaccine. Articles in Beckman and Musser state that protection lasts for twelve to fourteen months. The patient is naturally very worried and wants to take further vaccine but does not wish to run even a small chance of postvaccinal paralysis if it is not necessary. ALEX R. FREEMAN, M.D., Albany, Ga.

ANSWER.—The patient will not require further antirabic treatment. Immunity from the treatment in January will protect against the exposure in May. Marie has found complete immunity in dogs for eighteen months. Immunity in man lasts for at least twelve to fourteen months.

BRITTLE FINGER NAILS

To the Editor:—A woman, aged 32, otherwise in good health, is suffering from extreme brittleness of the fingernails. There is no associated pathologic condition of the nails. The brittleness, always more or less troublesome, has of late years become more so, to the extent that it is impossible for her to keep them from cracking and breaking. Naturally, being a woman and fastidious, she is much concerned. The literature that I have reviewed on the subject is vague as regards etiology and offers nothing in therapeusis. I have prescribed various calcium compounds and vitamin concentrates empirically and have given mild sedatives without any appreciable effect. As I said, thorough examination reveals no apparent somatic disturbance other than the complaint mentioned or neurosis. I should be grateful for any comment you may be able to make as regards etiology, prognosis and treatment. Please omit name and address. M.D., New York.

ANSWER.—The etiology of this type of nail defect is indefinite. One must rule out the contributory rôle that nail polishes and polish removers assume and caution the patient against their use. Hypovitaminosis is also a possible factor and vitamins B and D should be given. The daily massage of bland oil into the nails is also of value.

SCARLET FEVER IMMUNIZATION

To the Editor:—I would much appreciate information concerning the frequency, severity and duration of reactions to scarlatina immunization injections. Has there been any recent modification of toxin or the technic to reduce these reactions?

H. A. WILDMAN, M.D., Sterling, Ill.

ANSWER.—General reactions to scarlet fever toxin in active immunization against the disease occur in about 10 per cent. There has been no recent modification of the toxin or the technic. That the reactions are not a serious obstacle to immunization would appear to be indicated by the fact that the use of scarlet fever toxin has doubled within the last two years.

SIMULTANEOUS SCARLET FEVER AND GERMAN MEASLES

To the Editor:—At the present time there is a mild epidemic of German measles in this vicinity. Recently two brothers, aged 8 and 10, patients of mine, exposed to this infection with others, developed a typical morbilliform rash, blepharitis, epiphora, slight fever, malaise, coated tongue with red edges, and a slight dry cough. The rash spread from the face downward, clearing above as it progressed below. In several days they both felt as well as ever and all the rash was gone. There was no glandular involvement. About two weeks later one of the boys who a year ago had a severe urticaria following an injection of tetanus antitoxin (he was immunized three years ago against diphtheria) developed a definite peeling of the palms of both hands. It was then recalled that, mixed in with the morbilliform rash, had been a finer macular one. A cough was present for about one week at this time. What is the real diagnosis in this case? Please omit name.

M.D., Massachusetts.

ANSWER.—The description indicates that the one boy had both scarlet fever and German measles.

BURNS FROM PERMANENT WAVE MACHINE

To the Editor:—I am seeing an increasing number of scalp burns due to the so-called permanent wave machines. In all these burns I have had difficulty in bringing about healing and I have used everything that I can find, both old and new, without any striking result. These burns are usually round and of a third degree type with little or no tendency to heal. I understand that the hair is pulled so tightly in these machines that there is little or no feeling in the scalp; hence the great possibility of burning before subjective evidence. Any advice you may give me in this regard I will appreciate. Please omit name.

M.D., West Virginia.

ANSWER.—Burns from the so-called permanent wave machines are not electrical burns but due to heat, complicated with a strongly alkaline solution used to soften the hair. These burns are slow to heal because of their depth. The scalp is not very sensitive and the tension may lessen its sensitivity. We know of no method of hastening the healing process. Ordinary burn treatment is all that is indicated.

REACTIONS TO DICK TEST

To the Editor:—Can you give me information as to what the expected percentage of positive reactions to the Dick test would be in the age group of 15 to 20 years? Please omit name.

M.D., Illinois.

ANSWER.—Depending on previous environment, persons in the age group from 15 to 20 years may show positive reactions in from 40 to 60 per cent. If there has been a recent epidemic in the group and the individuals live in dormitories so that contact has been close, the incidence of susceptibility may be as low as from 10 to 15 per cent.

USE OF SCARLET FEVER ANTITOXIN

To the Editor:—What is the present-day opinion of the advisability of administering 2,000 units of scarlet fever serum for scarlet fever in country practice?

J. D. MICHIE, M.D., Childress, Texas.

ANSWER.—Two thousand units of scarlet fever antitoxin is inadequate dosage for the treatment of scarlet fever. This is the usual prophylactic dose.

SENSITIVITY TO LIVER EXTRACT

To the Editor:—The query on the possible sensitivity to liver extract (THE JOURNAL, June 1, p. 2019) prompts this brief note. I had been treating three pernicious anemia patients with Lederle solution liver extract parenteral, 3 cc. vials. The injections were given at three day intervals. No patient showed any untoward reactions for the first six injections. Following the seventh injection in one patient a generalized urticaria appeared within eighteen hours. Ephedrine by mouth was sufficient to control this. The urticaria recurred after the eighth and ninth injections. It did not occur however following the tenth injection, which consisted of solution liver extract-Lilly, nor has it recurred since the patient has been receiving solution liver extract-Lederle for oral use.

MEYER BLOOM, M.D., Johnstown, Pa.

ROENTGEN RAYS FOR PROSTATIC HYPERTROPHY

To the Editor:—My attention has recently been called to an answer given under Queries and Minor Notes in THE JOURNAL, March 30, concerning the use of roentgen rays in the treatment of benign hypertrophy of the prostate. The answer given hardly represents an accurate statement of the facts. Roentgen treatment has been used to a considerable extent for benign hypertrophy of the prostate and with a considerable degree of success. While it may be literally true that the size of the gland may not be greatly reduced by such treatment, there is no question that in a considerable proportion of cases the symptoms are relieved, sometimes for prolonged periods. A considerable literature on this subject has already accumulated.

A. U. DESJARDINS, Rochester, Minn.

Medical Examinations and Licensure

COMING EXAMINATIONS

AMERICAN BOARD OF OPHTHALMOLOGY: The Cincinnati examination previously announced will not be held. The next examination will be given in St. Louis, Nov. 18. *Application must be filed before Sept. 15.* Sec., Dr. William H. Wilder, 122 S. Michigan Ave., Chicago.

American Board of Otolaryngology: Cincinnati, Sept. 14. Sec., Dr. W. P. Wherry, 1500 Medical Arts Bldg., Omaha.

AMERICAN BOARD OF PEDIATRICS: Seattle, Aug. 8, Philadelphia, Oct. 10, and St. Louis, Nov. 10. Sec., Dr. C. A. Aldrich, 723 Elm St., Winnetka, Ill.

AMERICAN BOARD OF RADIOLOGY: Detroit, Dec. 1-2. Sec., Dr. Byrl R. Kirklin, Mayo Clinic, Rochester, Minn.

CALIFORNIA: Los Angeles, July 22-25. Sec., Dr. Charles B. Pinkham, 420 State Office Bldg., Sacramento.

CONNECTICUT: *Endorsement.* Hartford, July 23. Sec., Medical Examining Board, Dr. Thomas P. Murdock, 147 W. Main St., Meriden.

NATIONAL BOARD OF MEDICAL EXAMINERS: The examination will be held in all centers where there are Class A medical schools and five or more candidates desiring to take the examination, Sept. 16-18. Ex. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia.

NEVADA: Reno, Aug. 5. Sec., Dr. Edward E. Hamer, Carson City.

OREGON: *Basic Science.* Corvallis, July 27. Sec., Basic Science Examining Committee, Mr. Charles D. Byrne, University of Oregon, Eugene.

PUERTO RICO: San Juan, Sept. 3. Sec., Dr. O. Costa Mandry, Box 536, San Juan.

Montana April Report

Dr. S. A. Cooney, secretary, Montana State Board of Medical Examiners, reports the written examination held in Helena, April 2-3, 1935. The examination covered 10 subjects and included 50 questions. An average of 75 per cent was required to pass. Four candidates were examined, all of whom passed. Eight physicians were licensed by reciprocity and 1 physician was licensed by endorsement. The following schools were represented:

School	PASSED Year Grad.	Per Cent
Loyola University School of Medicine	(1922)	75.2
Northwestern University Medical School	(1935)	83.2
University of Minnesota Medical School	(1934)*	75.8
Marquette University School of Medicine	(1935)	82.9

School	LICENSED BY RECIPROCITY Year Grad.	Reciprocity with
College of Medical Evangelists	(1934)	Oregon
Georgetown University School of Medicine	(1929)	Michigan
Chicago College of Medicine and Surgery	(1917)	Wyoming
University of Minnesota Medical School	(1927), (1930)	Minnesota
St. Louis University School of Medicine	(1932)	Missouri
University of Wisconsin Medical School	(1930), (1933)	Wisconsin

School	LICENSED BY ENDORSEMENT Year Grad.	Endorsement of
State University of Iowa College of Medicine	(1924)	N. B. M. Ex.

* This applicant has received an M.B. degree and will receive an M.D. degree on completion of internship.

Iowa Reciprocity and Endorsement Report

Mr. H. W. Grefe, director, Division of Licensure and Registration, reports 5 physicians licensed by reciprocity and 1 physician licensed by endorsement from Feb. 28 to June 1, 1935. The following schools were represented:

School	LICENSED BY RECIPROCITY Year Grad.	Reciprocity with
University of Illinois College of Medicine	(1934)	Illinois
University of Michigan Medical School	(1929)	Michigan
Creighton University School of Medicine	(1931)	Nebraska
University of Nebraska College of Medicine	(1934)	Nebraska
University of Wisconsin Medical School	(1932)	Wisconsin

School	LICENSED BY ENDORSEMENT Year Grad.	Endorsement of
University of Michigan Medical School	(1932)	N. B. M. Ex.

Ohio Reciprocity and Endorsement Report

Dr. H. M. Platter, secretary, Ohio State Medical Board, reports 19 physicians licensed by reciprocity and 3 physicians licensed by endorsement at a meeting held April 2, 1935. The following schools were represented:

School	LICENSED BY RECIPROCITY Year Grad.	Reciprocity with
Emory University School of Medicine	(1926)	New York
Indiana University School of Medicine	(1930)	Indiana
State University of Iowa College of Medicine	(1933, 2)	Iowa
University of Louisville School of Medicine	(1929)	Kentucky
Wayne University College of Medicine	(1934)	Michigan
University of Minnesota Medical School	(1928)	Iowa
Washington University School of Medicine	(1929)	Missouri

Creighton University School of Medicine	(1931)	Indiana
Jefferson Medical College of Philadelphia (1928) Colorado	(1927)	Penna.,
Temple University School of Medicine	(1922)	Penna.
Medical College of the State of South Carolina (1933) S. Carolina	(1926)	W. Virginia,
Vanderbilt University School of Medicine	(1933)	Tennessee
University of Texas School of Medicine	(1931)	Texas
University of Virginia Department of Medicine	(1930)	Virginia
University of Toronto Faculty of Medicine	(1925)	Connecticut
Medizinische Fakultät der Universität Wien	(1910)	Wisconsin

LICENSED BY ENDORSEMENT

School	Year Grad.	Endorsement of
Johns Hopkins University School of Medicine	(1930, 2)	N. B. M. Ex.
Harvard University Medical School	(1929)	N. B. M. Ex.

Illinois April Examinations

Mr. Clinton P. Bliss, assistant director, Illinois Department of Registration and Education, reports the written and practical examination held in Chicago, April 9-11, 1935. The examination covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. Forty-eight candidates were examined, 46 of whom passed and 2 failed. The following schools were represented:

PASSED

School	Year Grad.	Per Cent
Chicago Medical School	(1933)	83,* (1935) 78, 83, 85
Northwestern University Medical School (1934) 86, (1935) 78, 78,† 80† 83, 83, 83, 83,† 85, 85,† 85,† 89	(1933)	82,†
Rush Medical College	(1934)	83,
School of Medicine of the Division of the Biological Sciences	(1934)	88, 88, (1935) 79,† 80, 81,† 81,† 83, 83, 83,† 85
University of Illinois College of Medicine 82,† 83,† 84, 84, (1935) 83, 83	(1934)	82, 83 80,
Creighton University School of Medicine	(1933)	81†
New York University, University and Bellevue Hospital Medical College	(1928)	83†
University of Pennsylvania School of Medicine	(1933)	85
University of Wisconsin Medical School	(1933)	81
McGill University Faculty of Medicine	(1933)	82
Albert-Ludwigs-Universität Medizinische Fakultät, Freiburg	(1927)	84‡
Kharkov Medical Institute	(1917)	84‡

FAILED

School	Year Grad.	Number Failed
Loyola University School of Medicine	(1930)	1
Friedrich-Wilhelms-Universität Medizinische Fakultät, Berlin	(1924)‡	1

Twelve physicians were successful in the practical examination for reciprocity and endorsement applicants held in Chicago, April 11. The following schools were represented:

PASSED

School	Year Grad.	Reciprocity with
University of Illinois College of Medicine	(1934)†	California
Indiana University School of Medicine	(1933)†	Indiana
State University of Iowa College of Medicine	(1933)	Iowa
Boston University School of Medicine	(1932)	Maine
University of Michigan Medical School	(1926)	Indiana
St. Louis University School of Medicine	(1922),† (1933)†	Missouri
Washington University School of Medicine	(1933)†	Missouri
Temple University School of Medicine	(1932)	California
Marquette University School of Medicine	(1927)	Wisconsin

PASSED

School	Year Grad.	Endorsement of
Rush Medical College	(1933)	N. B. M. Ex.
University of Pennsylvania School of Medicine	(1930)	N. B. M. Ex.

* This applicant has received a four-year certificate and will receive the M.D. degree on completion of internship. License has not been issued.

† License withheld for fee.

‡ Verification of graduation in process.

Idaho April Examination

Hon. Emmitt Pfost, commissioner of law enforcement, reports the written examination held by the Idaho Medical Examining Board in Boise, April 2-3, 1935. The examination covered 13 subjects and included 130 questions. An average of 75 per cent was required to pass. Two candidates were examined, both of whom passed. Six physicians were licensed by endorsement after an oral or written examination. The following schools were represented:

PASSED

School	Year Grad.	Per Cent
State University of Iowa College Medicine	(1934)	80
University of Michigan Medical School	(1932)	79

LICENSED BY ENDORSEMENT

School	Year Grad.	Endorsement of
College of Medical Evangelists	(1932)	California
George Washington University School of Medicine	(1929)	California
Washington University School of Medicine	(1932), (1933)	Utah
University of Oregon Medical School	(1931)	Oregon
University of Tennessee College of Medicine	(1932)	Tennessee

Book Notices

Annual Reprints of the Reports of the Council on Pharmacy and Chemistry of the American Medical Association for 1934, with the Comments That Have Appeared in The Journal. Cloth. Price, $1. Pp. 135. Chicago: American Medical Association, 1934.

Each succeeding volume of reports of the Council reveals more of the long and successful fight in the interest of rational therapeutics. The Council is no longer chiefly concerned with noisome proprietaries and yet this latest volume contains reports on such articles as "Vita-Cell," a secret preparation marketed with exaggerated claims, and "Raylos," a shotgun preparation marketed in a way to promote its ill advised use by the public. Most of the "unacceptable" reports in this volume are concerned with products that may have some merit but are not offered to the public in a way which experience has taught the Council is necessary before a therapeutic agent is acceptable. Such products are Iodine Dusting Powder (Sulzberger), rejected for lack of clinical evidence of its advantage over one of its constituents; Pernoston, rejected because of lack of clinical evidence to justify routine intravenous injection of barbital compounds; Di-Hydranol, a claimed bactericidal agent proposed for use as an "intestinal antiseptic," a claim not supported by sufficient clinical evidence; and Squibb Adex Tablets, a product containing a concentrate of vitamins A and D, for which the firm could not agree to adopt a more informative name.

To those who have followed the Council's investigation of B. acidophilus therapy, the report "Acidophilus Bacillus Liquid-Mulford and Mulford Acidophilus Bacillus Block Omitted from N. N. R." will be of interest. The Council has apparently not yet reached an ultimate conclusion concerning acidophilus therapy, but it has for years held that no product could be expected to be of value unless it could show at least one hundred million viable B. acidophilus organisms at the "date of expiration." Competent bacteriologic examination showed that the two preparations here reported were inferior to this standard. Further grounds for omission were the failure of the manufacturer to comply with certain stipulations in regard to labels and advertising. Another noteworthy omission is that of Alpha-Naphco and its dosage forms, omitted because the Council on reconsideration found that it is a weak antiseptic.

The Council also issues preliminary reports, which define the status of new preparations for which the evidence is not yet sufficient to justify their presentation to the medical profession generally. Preliminary reports do not imply rejection but rather postponement of consideration until more evidence is reported by competent investigators. These reports are the outposts of therapeutic progress and as such are valuable sources of information to physicians. In this volume there are preliminary reports on Adrenal Cortex Extract, concerned mostly with scientific terminology, Cysteine Hydrochloride, Dihydroxy-Anthranol (Anthralin), Gastric Mucin, Hemoprotein (Brooks), Phenylmercuric Nitrate and Phenylmercuric Chloride.

Illustrative of the Council's efforts to keep those concerned informed of the basis for its actions are the "Recent Revisions or Elaborations of the Council's Rules of Interest to Manufacturers and the Medical Profession," which have appeared in the last two volumes. These inform the profession of the various problems which arise and the care given to their consideration. To be commended also is the "Report on Sterility of Ampule Preparations."

Radiologie clinique du tube digestif. Publiée sous la direction de MM. Pierre Duval, J.-Ch. Roux et H. Béclère. I. Estomac et duodénum. Par Pierre Duval, Jean Charles Roux et Henri Béclère. Fasc. I: Estomac. Fasc. II: Duodénum. Second edition. Cloth. Price, 330 francs. Pp. 252, with illustrations. Paris: Masson & Cie, 1935.

The first edition of this study, published seven years ago, has been completely revised and the newer methods are included. New chapters on such subjects as gastric syphilis and gastritis and additional material on diaphragmatic hernia and pyloric stenosis have made the work complete. The publication is in two large volumes, one of 252 double pages on the stomach and a volume of 114 double pages on the duodenum. A com-

plete description of the methods of fluoroscopic examination used by the authors is given. These methods are essentially the same as are being used in the better clinics of this country, with emphasis especially on the observations in both upright and horizontal positions and in the various oblique and tilted positions. The authors have also used the introduction of a mixture of barium sulphate solution and air into the stomach to good advantage in bringing out questionable lesions that may be ordinarily covered over with a thick layer of heavy barium solution. Both volumes are liberally illustrated with fine reproductions of x-ray plates illustrating every possible lesion of the stomach and duodenum that can be encountered as well as diagrammatic studies of every type of gastric and duodenal lesion. The two volumes make a complete x-ray atlas on the stomach and duodenum, which can be referred to either by the skilled x-ray student or by the novice in roentgen diagnosis to good advantage. The books are beautifully bound, printed on excellent paper and written in simple, understandable French.

Social Work Year Book 1935: A Description of Organized Activities in Social Work and in Related Fields. Edited by Fred S. Hall. Third issue. Cloth. Price, $4. Pp. 698. New York: Russell Sage Foundation, 1935.

The third issue establishes this year book as the standard reference work in the special field of social work. If one recognizes and allows for the attitude from which nearly all social workers approach the subject treated, such a volume is of considerable value. Each article is followed by a fairly complete bibliography. However, the same bias that runs through the articles tends to the omission from the bibliography of works that do not agree with the attitude of the authors. The article on medical care is written by Michael Davis and Marcella Rivers and takes its information largely from the publications of the Committee on the Costs of Medical Care. It is not accurate in its description of the Michigan Mutual Health Service and the situation in Washington and California. There is no mention of the fact that the insurance plans in Washington and Oregon were forced by compensation laws and are by no means welcomed by the physicians. Compulsory health insurance is treated by I. S. Falk, who devotes a considerable portion of the space to the "Model Bill of the American Association for Social Security." It is not probable that most physicians will turn to this work for authoritative information on medical matters, but it is indisputably the most authoritative work in its own special field of social work. It is divided into two parts. The larger part of the book consists of a treatment in alphabetical order of various subjects; the second section is a "directory of agencies." This section gives a brief summary of the organization and objectives of what seems to be a fairly complete list of the agencies concerned in any way with social work.

Repos physiologique du poumon par hypotension dans le traitement de la tuberculose pulmonaire: Observations cliniques et physiologiques. Par F. Parodi, agrégé de l'Université de Milan. Traduit par Tatiana Parodi. Préface de E. Sergent. Paper. Price, 48 francs. Pp. 232, with 59 illustrations. Paris: Masson et Cie, 1935.

This book is a well constructed, simply written discussion of the principles underlying the employment of pneumothorax in pulmonary tuberculosis. The description of the clinical technic and management is plainly based on extensive experience. In the earlier chapters, however, the discussion of mechanical principles is unnecessarily argumentative and academic. The author takes issue with the view that the negative endopleural pressure depends on the elastic tension of the lung and cites experiments both by himself and by others purporting to show that the pressure is not equal in all parts of the cavity and that therefore lung expansion cannot be equal in all parts. In this he disregards the unequal excursions of different parts of the thoracic wall. He ascribes to the weight of the lung the entire rôle of creating endopleural pressure, which would therefore be changed by variations in the weight of circulating blood. Also he denies, apparently on purely speculative grounds, that diffusion of fluid out of the pleural cavity can create negative pressure. This reveals some lack of familiarity with the physical laws governing diffusion. Still further he discusses the density of the lung tissue as a factor in producing endopleural pressure, overlooking the fact that density is one of the factors contributing to elastic recoil. The ultimate conclusions and their applications are not, however, invalidated by the academic digressions. The book is well illustrated, and numerous references are cited. Withal the work is worthy of consideration by those interested in the clinical problems involved.

The Care of the Aged, the Dying and the Dead. By Alfred Worcester, M.D., Sc.D., Henry K. Oliver Professor of Hygiene, Harvard University. Paper. Price, $1. Pp. 77. Springfield, Ill., and Baltimore: Charles C. Thomas, 1935.

This book considers certain obligations of the physician, which are obvious when attention is called to them but which are in a way extramedical. They have to do with ministrations of sympathy and comfort for the aged and dying and of the disposition of the dead. The attitude of its author is that of a wise practitioner of long experience and of sympathetic disposition. It will bring to every reader the suggestion of activities in emotional situations where sympathy is useful and ought to be appreciated, and the realization that he should be more thoughtful of his obligations in such situations than he is likely to be. It is a wholesome little book and worthy of reading by physicians and laymen.

Scritti medici in onore di R. Jemma nel XXX anno d'Insegnamento. Redatti dal Prof. I. Nasso e dal Dott. E. Schwarz. In two volumes. Paper. Pp. 1438, with illustrations. Milan: Cromotipia Ettore Sormani, 1934.

This is a beautifully prepared festschrift of the eminent Italian professor of pediatrics. It is bound in stiff paper and contains contributions from 144 pediatricians from all over the world, most of whom of course are Italian; but many French, German, English, American, Scandinavian and South American contributions are represented. The articles are published in Italian, English, French, German and Spanish. The publication is most elaborate. The articles cover a range of subjects that touch on almost every phase of pediatrics.

Selection of Risks for Life Insurance, Health Insurance, Accident Insurance. By Harry W. Dingman, Vice President and Medical Director, Continental Casualty Company and Continental Assurance Company. Cloth. Price, $5. Pp. 380. Cincinnati: National Underwriter Co., 1935.

Without preface or introduction, the author proceeds directly to a discussion of the selection of risks for insurance, with an explanation of the duties of the medical examiner, inspector and home office selector. The importance of the personal and family histories and the influence of race, occupation, environment, habitat, morals, finances and physical status are then discussed. The remainder of the book is devoted to a discussion of the various diseases and conditions affecting risks in the light of the accumulated experience of life insurance companies in the past. These factors are arranged alphabetically, permitting quick reference. The sections dealing with albuminuria, alcoholism, amebic dysentery, aviation hazard, blindness, blood pressure, claim psychology, gallbladder disease, glycosuria, heart disease, peptic ulcer, pneumoconiosis, pulmonary tuberculosis and weight are of particular interest. The book is highly recommended and should prove useful to those engaged in life insurance work.

Limbs for the Limbless: A Handbook on Artificial Limbs for Layman and Surgeon. By John Culbert Faries, Ph.D., Instructor in Orthopedic Surgery in the Post-Graduate Medical School, Columbia University. Introduction by Fred H. Albee, M.D., Sc.D., LL.D., Chairman of the New Jersey State Rehabilitation Commission. Cloth. Price, $2. Pp. 104, with illustrations. New York: Institute for the Crippled and Disabled, 1934.

This small book presents a strong argument for the universal use of artificial limbs whenever the type of amputation makes it possible. Children should not be allowed to wait until full growth before being furnished with a suitable prosthesis, and adults should be urged to abandon crutches and use artificial legs. The history and development of prosthetic apparatus is lightly sketched, and the generally desirable features of artificial legs and arms are emphasized without mention of any specific varieties or manufacturers. The limitations of apparatus are well described in connection with the various sites of amputation, and this is the most important portion of the book from the standpoint of the patient. The points of election for amputation are shown by the familiar and valuable illustrations from the War Department's Review of War Surgery and Medicine, 1918. The preparation and care of the stump is correctly described. The importance of "provisional"

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prostheses in reducing and shaping the stump is well emphasized and might well have been supplemented by a detailed statement of the method of making these "pilons," although the author remarks that this probably is not the place to describe the technic. The appliances for hand and arm amputations are well discussed and rightly sound a note of pessimism regarding the value of the cineplastic procedures of Vanghetti and Sauerbruch. The more complicated mechanical hands are not as useful as at first they seemed to be, and the emphasis is properly laid on the more simple hooks and tool holders, with a "dress" arm merely for the sake of appearance. The book is worth reading by patients as well as by surgeons.

The Anatomy of the Leg and Foot for Students and Practitioners of Chiropody. By Philippa N. Vaus, M.R.C.S., L.R.C.P., Lecturer to the London School of Chiropody. With an introduction by A. T. Compton, F.R.C.S., Lecturer in Anatomy to King's College, London. Cloth. Price, $2. Pp. 107, with 47 illustrations. Baltimore: William Wood & Company, 1935.

This book was written for students and practitioners of chiropody. The first essential to good chiropody is a thorough knowledge of the anatomy of the leg and foot and some knowledge also of general anatomy. The book can be highly recommended as fulfilling the purpose for which it was written. The illustrations are satisfactory and the text is easily read. There is an appendix containing the B N A, revised and old terminology of anatomic structures. The author believes that chiropody should not be practiced by any one without a recognized diploma. The public will realize that as much harm can be done by an ignorant and unskilled chiropodist as by an unqualified dentist. The author looks forward to the day, which she hopes is not far distant, when a recognized diploma will be necessary for the legitimate practice of chiropody in England. She emphasizes the desirability of such a situation and the benefit to be derived for public and practitioner alike.

Medicolegal

Hospitals: Burns Inflicted on Unconscious Patient.—After a cesarean operation in the hospital-defendant, and while the patient was still unconscious, hot compresses and hot water bottles were applied and the patient was burned. She and her husband sued the hospital, joining with it as a defendant one of two special nurses whom the hospital had called in to care for the patient. The jury returned a verdict in favor of the nurse, but against the hospital. The hospital thereupon appealed to the district court of appeals, second district, division 2, California.

The record does not show by whom the compresses and hot water bottles were applied. The hospital contended, however, that the special nurses on the case were not employees of the hospital so as to render it liable for their negligence. The appellate court held to the contrary, on authority of *McBride* v. *Clara Barton Hospital, 75 Calif. App. 161, 241 P. 941.* The jury was justified in concluding from the evidence that the patient's injuries were caused either by a nurse regularly employed by the hospital or by one of the two nurses specially engaged by the hospital. The verdict that absolved the special nurse who had been joined with the hospital as a defendant did not exonerate the hospital, for she was not the only nurse caring for the patient when the burns were inflicted.

The patient's physician and her attending nurses testified that her injuries were burns. The hospital produced an expert witness who testified, in response to a hypothetical question, that the condition described could have been a herpetic condition. The hospital then complained, on appeal, that the trial court, in instructing the jury, assumed that the patient's injuries were burns. But, said the appellate court, the expert witness produced by the hospital did not see the patient, and, in the absence of evidence more substantial than that offered by the hospital, the court had a right to conclude that the injuries were burns.

The trial court did not err in instructing the jury on the doctrine of res ipsa loquitur, for the patient was unconscious during the time the injuries were being inflicted and that doctrine was clearly applicable. Neither did the trial court err in giving certain instructions that the hospital contended made it and its nurses, in effect, insurers against negligence and burns, since the instructions complained of, considered in the light of the court's entire charge, could not have misled the jury on any essential legal principles. When a patient is unconscious after an operation and those charged with caring for her, knowing her helpless condition, use hot compresses and hot water bottles, they must use them in such a way and keep such watch over them as not to burn the patient.

For the reasons stated, the judgment against the hospital was affirmed.—*Timbrell v. Suburban Hospital, Inc. (Calif.), 36 P. (2d) 435.*

Malpractice: Reliance on Sponge Count by Nurses No Defense.—The patient and her husband sued the physician-defendant, alleging that in the performance of an abdominal operation a sponge was left in the patient's abdomen. The "sponge" was described as "a gauze pack or pad, six inches wide and about eighteen inches long—6 ply gauze in thickness, with a tape attached to one corner, about four inches long." To it was attached a metal ring. From a judgment for the plaintiffs, the physician appealed to the supreme court of New Jersey, alleging that the trial court erred in not directing a verdict in his favor.

The physician-defendant operated on his patient in a public hospital, over which he had no control, and the hospital supplied two nurses from its staff, to assist in the operation. He asserted that by recognized custom it was the duty of the nurses who assisted him to keep count of the sponges and the duty of the head nurse to report, before the operation wound was closed, as to the correctness of the sponge count. He contended that the head nurse had so reported to him in this case and he argued that he was entitled to rely on that report, as the nurses were not in his employ or furnished by him. He claimed that under the circumstances he was not required to make any extended examination of internal conditions after the operation and was not responsible for an erroneous count of the sponges used. Any duty of independent examination that rested on him, he contended, was shown to have been adequately performed, so that nothing in the evidence justified the jury in finding that he was negligent, and the case therefore should not have been submitted to the jury.

The supreme court of New Jersey, however, did not agree with the defendant's contentions. Notwithstanding the nurse's count, said the court, a duty remained with the defendant to examine independently, to make sure that no foreign body remained in the abdominal cavity. The existence and non-discovery of so considerable an object as the pad that was left in the patient's body in this case, particularly in view of the testimony of expert witnesses as to the usual practice of an independent examination by operating physicians, presented a case for submission to the jury. The very fact that the physician-defendant was operating with nurses not in his employ nor, so far as appears, of his own selection, seemed to the court to give emphasis to this view.

The court affirmed the judgment in favor of the plaintiff.—*Stawicki v. Kelley (N. J.), 174 A. 896.*

Society Proceedings

COMING MEETINGS

American Academy of Ophthalmology and Otolaryngology, Cincinnati, Sept. 14-20. Dr. William P. Wherry, 107 South 17th Street, Omaha, Executive Secretary.

Colorado State Medical Society, Estes Park, September 5-7. Mr. Harvey T. Sethman, 537 Republic Building, Denver, Executive Secretary.

National Medical Association, New Orleans, Aug. 11-17. Dr. C. A. Lanon, 431 Green Street, South Brownsville, Pennsylvania, Secretary.

Northern Minnesota Medical Association, Duluth, Aug. 12-13. Dr. Oscar O. Larsen, Detroit Lakes, Secretary.

North Pacific Pediatric Society, Seattle, August 9-10. Dr. F. H. Douglass, 509 Olive Street, Seattle, Secretary.

Utah State Medical Association, Logan, September 5-7. Dr. George N. Curtis, Judge Building, Salt Lake City, Secretary.

Washington State Medical Association, Everett, Aug. 12-14. Dr. Curtis H. Thomson, 1305 Fourth Avenue, Seattle, Secretary.

Wyoming State Medical Society, Lander, Aug. 12-13. Dr. Earl Whedon, 50 North Main Street, Sheridan, Secretary.

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Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Periodicals are available from 1925 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Physiology, Baltimore

112: 1-226 (May) 1935. Partial Index

*Origin and Significance of Neutral Chloride in Secretions of Stomach and Duodenum. C. M. Wilhelmj, L. C. Henrich, I. Neigus and F. C. Hill, Omaha.—p. 15.

Reserve Store of Hemoglobin Producing Substances in Growing Dogs as Influenced by Diet. F. S. Robscheit-Robbins and G. H. Whipple, Rochester, N. Y.—p. 27.

Kinetics of Elimination of Dye Water Blue from Dog Plasma After Intravenous Injection. A. Hemingway, F. H. Scott and H. N. Wright, Minneapolis.—p. 56.

Increased Susceptibility to Local Infection Following Blockage of Lymph Drainage. C. K. Drinker, Madeleine E. Field, H. K. Ward and C. Lyons, Boston.—p. 74.

*Use of Hypertonic Sucrose Solution Intravenously to Reduce Cerebrospinal Fluid Pressure Without Secondary Rise. L. T. Bullock, M. I. Gregersen and R. Kinney, Boston.—p. 82.

Effect of Intravenous Injection of Sucrose and Glucose on Reducing Power of Cerebrospinal Fluid, Before and After Hydrolysis. M. I. Gregersen and Lillian Wright, Boston.—p. 97.

Calorigenic Action of Fat and Carbohydrate in Pancreatic Diabetes. G. C. Ring, Boston.—p. 124.

Immediate Effect of Spinal Transection on Crossed Extension Reflex. A. Forbes, M. Cattell and H. Davis, Boston.—p. 152.

Relation Between Motor and Secretory Functions of Human Fasting Stomach. Frances A. Hellebrandt, Madison, Wis.—p. 162.

Relationship of Extrinsic Renal Nerves to Origin of Experimental Hypertension. I. H. Page, New York.—p. 166.

Pressure Changes Induced in Vascular System as Result of Compression of Limb, and Their Effect on Indirect Measurement of Lateral Pressures. H. C. Bazett, L. B. Laplace and J. C. Scott, Philadelphia.—p. 182.

Erythrocyte and Hemoglobin Increase in Human Blood During and After Exercise. E. C. Schneider and C. B. Crampton, Middletown, Conn.—p. 202.

Stimulation of Hypothalamus, with Especial Reference to Its Effect on Gastro-Intestinal Motility. H. Kabat, B. J. Anson, H. W. Magoun and S. W. Ranson, Chicago.—p. 214.

Neutral Chloride in Secretions of Stomach and Duodenum.—In a series of ninety-five experiments on dogs, Wilhelmj and his associates found that the neutral chloride concentrations of the nonacid secretions of the stomach and the mixed duodenal secretions were approximately the same, the average values ranging from 358 to 307 mg. per hundred cubic centimeters. When the nonacid secretions of the stomach or the duodenal secretions are mixed with tenth normal hydrochloric acid, only about one third of the neutral chloride fraction represents neutralized hydrochloric acid.

Hypertonic Sucrose Solution Intravenously to Reduce Cerebrospinal Fluid Pressure.—Bullock and his co-workers compared the effects of intravenously injected sucrose, dextrose and sodium chloride solution on the cerebrospinal fluid pressure under experimental conditions. Spinal fluid pressures were measured aseptically for from ten to thirteen hours on dogs anesthetized with sodium amytal. Control experiments showed a gradually rising pressure during the period of observation. There was also a moderate increase in the number of white cells in the spinal fluid, which was not produced by sodium amytal alone. Intravenous injection of 50 per cent dextrose (3.1 Gm. per kilogram) and 30 per cent sodium chloride (0.61 Gm. per kilogram) reduced the spinal fluid pressure for from two to three hours; the pressure then rose above the control level. From 3 to 8 Gm. of sucrose per kilogram of body weight, injected intravenously in a 50 per cent solution, reduced the spinal fluid pressure in from five to eight hours. The magnitude of the fall of pressure (from 50 to 150 mm.) was dependent on the amount of sucrose given and on the height of the initial pressure. Greater effects were obtained with higher initial pressures. Although observations were made for twelve hours after injection, there was no indication of the beginning of a secondary rise of pressure exceeding the control level, except in three experiments. In these, it could be attributed to definite causes other than the sucrose. Injection of sucrose induced active diuresis lasting about three hours, during which the kidneys eliminated about four times as much fluid as was given intravenously with the sugar. The mechanisms by which various hypertonic solutions reduce cerebrospinal fluid pressure are compared and discussed. While temporarily increasing the circulating plasma volume, sucrose reduces the spinal fluid pressure without a secondary rise.

American Journal of Public Health, New York

25: 681-788 (June) 1935

Serving the Public for Health. H. F. Vaughan, Battle Creek, Mich.—p. 681.

Id. J. L. Pomeroy, Los Angeles.—p. 687.

Fluorine Toxicosis: Public Health Problem. Margaret Cammack Smith, Tucson, Ariz.—p. 696.

American Standards for Exhaust Systems. C. Ainsworth, New York.—p. 703.

The Future of the Program for Tuberculosis Control. K. Emerson, New York.—p. 707.

Selling Health Department Members First on Health Education. H. Williams, Baltimore.—p. 715.

Routine Use of Modified Eijkman Medium in Examination of Oysters, Crabmeat and Other Substances. C. A. Perry and A. A. Hajna, Baltimore.—p. 720.

The Community Program of Health Education. C. E. Turner, Cambridge, Mass.—p. 725.

Chlorination of Los Angeles Water Supply. R. F. Goudey, Los Angeles.—p. 730.

Individual Variations in Immunity. Hulda E. Thelander, San Francisco.—p. 737.

Tuberculosis Control in Railway Health Insurance Program. P. K. Brown, San Francisco.—p. 741.

Automatic Liquid Dispenser. H. Bukoski, Lansing, Mich.—p. 749.

Am. J. Roentgenol. & Rad. Therapy, Springfield, Ill.

33: 589-732 (May) 1935

The "Phrygian Cap" in Cholecystography: Congenital Anomaly of Gallbladder. E. A. Boyden, Minneapolis.—p. 589.

Intrahepatic Gallbladder. E. P. McNamee, Cleveland.—p. 603.

Roentgenologic Significance of "Milk of Calcium" Bile. K. Kornblum and W. C. Hall, Philadelphia.—p. 611.

Advantages of Intensified Oral Cholecystography. W. H. Stewart and H. E. Illick, New York.—p. 624.

Cholecystographic Diagnosis of Papillomas and Tumors of Gallbladder. C. Moore, Washington, D. C.—p. 630.

Treatment of Pulmonary Cavities. L. H. Fales and E. A. Beaudet, Livermore, Calif.—p. 636.

Roentgen Study of Gastro-Intestinal Tract in Chronic Idiopathic Adult Tetany. E. P. Pendergrass and B. I. Comroe, Philadelphia.—p. 647.

Congenital Anomalies of Alimentary Tract, with Especial Reference to Congenitally Short Esophagus. W. F. Manges and L. H. Clerf, Philadelphia.—p. 657.

Mortality Study in Carcinoma of Uterine Cervix Treated by Irradiation. R. E. Fricke, Rochester, Minn.—p. 670.

Radium in Treatment of Metastatic Epidermoid Carcinoma of Cervical Lymph Nodes. D. Quick, New York.—p. 677.

Radium Dosage and Technic in Carcinoma of the Skin, with Especial Reference to Interstitial Irradiation with Platinum Iridium Needles. H. N. Cole and J. R. Driver, Cleveland.—p. 682.

*Radium Dosage and Technic in Carcinoma of Tonsil, Pharynx and Larynx. M. Cutler, Chicago.—p. 690.

Design of Flexible Radium Bomb with Adequate Protection, Delivering Homogeneous Field of Radiation at Various Distances. W. S. Newcomet and B. A. Hughes, Philadelphia.—p. 694.

Use and Abuse of Interstitial Irradiation. A. Soiland, Los Angeles.—p. 698.

Radium Dosage and Technic in Carcinoma of Tonsil.—Cutler limits his discussion to certain observations on the effect of the total period of irradiation on the skin, the tumor bed and the local lesion in carcinoma of the tonsil, pharynx and larynx treated by the 4 Gm. radium pack. He selected five cases, which are of interest as evidence in the problem of the upper time limit for total irradiation without the production of radiation immunity and as evidence on the dose necessary to produce an epidermitis and the upper limits of safety in massive radium therapy. The lesion was early and localized in one case and advanced in four cases. Complete disappearance of the lesions was accomplished in all the cases by protracted radium pack therapy. The lesions were exposed twice daily and consecutively. The distances were 10 and 15 cm. An epithelitis was produced in every instance and an epidermitis in three of the five cases. These observations are presented to demonstrate a primary disappearance of disease in response

to protracted irradiation. The patients have been free from disease for periods varying between nine and eighteen months. The short interval since treatment permits no deductions on the permanence of the results. These observations, however, seem to confirm the possibility that, if continuity of treatment is observed and the total dose is adequate, the total period of irradiation may be prolonged to forty, fifty or even sixty days without necessarily inducing a radiation immunity. Although it is possible that local recurrences may still develop in these cases because of the short interval of time, it is much more likely that reappearance of the disease—if it occurs—will take place in the form of metastases to lymph nodes outside the field of irradiation or to distant viscera.

Annals of Internal Medicine, Lancaster, Pa.

8: 1387-1574 (May) 1935

Malignant Monoblastoma: Variant of Monocytic Leukemia. L. A. Mitchell, Newark, Ohio.—p. 1387.
Clinical Studies in Electrocardiography: III. Persistent Abnormal Lead IV Findings in Serial Electrocardiograms, with Negative Three Routine Leads, in Coronary Thrombosis. A. A. Goldbloom, New York.—p. 1404.
Carotid Sinus Reflex Hypersensitivity. H. M. Moses and S. S. Feinstein, Brooklyn.—p. 1413.
Chest Roentgen-Ray Study of Adult Negro Population of Entire Community. D. O. N. Lindberg, Decatur, Ill.—p. 1421.
*Plasma Cholesterol in Tuberculosis and Amyloid Disease. S. E. King and M. Bruger, New York.—p. 1427.
*Arteriosclerosis in Diabetes: I. Relationship Between Plasma Cholesterol and Arteriosclerosis: II. Effects of High Carbohydrate-Low Calory Diet. I. M. Rabinowitch, Montreal.—p. 1436.
Electrocardiographic Studies in Acute Coronary Thrombosis: I. Transient Heart Block of All Grades in a T_3, Q_3 Type of Case, with Serial Electrocardiograms from Actual Onset To and After Clinical Recovery. J. G. Knauer, Ancon, Canal Zone.—p. 1475.
Present Status of Problem of "Rheumatism": Review of Recent American and English Literature on "Rheumatism" and Arthritis: Part II. P. S. Hench, Rochester, Minn.; W. Bauer, Boston; A. A. Fletcher, Toronto; D. Ghrist, Los Angeles; F. Hall, Boston, and P. White, Charlotte, N. C.—p. 1495.

Plasma Cholesterol in Tuberculosis and Amyloid Disease.—King and Bruger observed in thirty-four cases of tuberculosis without amyloid disease that the predominating pulmonary lesion was ulcerative tuberculosis associated with a distinctly positive sputum and marked constitutional symptoms. The lowest cholesterol level occurred in one patient shortly before death in which only a trace was found. The highest value was 286 mg. per hundred cubic centimeters of blood. There was no apparent correlation between the plasma cholesterol and the age, extent or duration of the disease. In thirteen cases with a cholesterol concentration below 150 mg. per hundred cubic centimeters, death generally followed within a month. In the other twenty-one cases with normal or slightly elevated cholesterol levels the mortality over a period of six months was 22 per cent. In four cases, hypocholesterolemia was associated with an early fatal termination. In sixteen cases of tuberculosis with early amyloidosis of the kidney, severe tuberculosis was complicated by incipient renal amyloid degeneration. The amyloid was recognized by a positive congo red test and a constant urinary protein. Cholesterol values were higher in this group than in the previous ones. Only two cases with marked hypocholesterolemia were encountered; both of these terminated fatally within a brief period. The average cholesterol value for the other cases was 228 mg. per hundred cubic centimeters. The mortality during a period of six months was 22 per cent in those with normal or elevated plasma cholesterol. The most prominent clinical features of twenty cases of tuberculosis with amyloid nephrosis and edema were general anasarca and marked proteinuria. Pulmonary lesions were usually extensive. In three instances, bone tuberculosis was present. A marked increase in plasma cholesterol, as high as 450 mg., was found; the lowest cholesterol observed at the time of edema was 200 mg. In four cases a fairly severe anemia (60 per cent hemoglobin or less) was associated with hypercholesterolemia. When the prognosis was bad, a tendency toward a falling plasma cholesterol concentration became evident. A falling blood cholesterol was noted in several subjects shortly before death.

Arteriosclerosis in Diabetes.—Rabinowitch studied fifty cases of diabetes, which show that excess blood cholesterol is an important etiologic factor in the production of arteriosclerosis in the young diabetic patient. The data also appear to indicate that treatment with the high carbohydrate-low calory diet has delayed development of cardiovascular disease in the cases investigated. Time alone and further studies will determine whether this diet can actually prevent premature development of this complication. One of the most constant characteristics of the high carbohydrate-low calory diet is an immediate and sustained decrease of plasma cholesterol. The author believes that this finding is incontestable. Therefore, if the conclusion that excess cholesterol in the blood causes cardiovascular disease in the young diabetic patient is also found to be correct, the outlook of patients with diabetes has been greatly improved. Repetition of these studies is therefore warranted by others with similarly available facilities. In order that other data may be comparable, the method of investigation should be the same; the combined method of detecting arteriosclerosis should be used in every case. This includes a physical examination, examination of the fundi, roentgen examination of the lower extremities for calcification of the arteries, and roentgen examination (6 foot plate) of the heart. Any one method alone or any combination of two or three methods alone does not afford a sufficiently reliable index of the presence or absence of arteriosclerosis. For the estimation of plasma cholesterol, all blood samples should be collected in the fasting state; and in the interpretation of cholesterol data all conditions known to affect the concentration of cholesterol in the blood—that is, whether they increase or decrease it—other than diabetes and arteriosclerosis should be excluded as much as possible. In order that data of different clinics with respect to degree of control of diabetes may be reasonably comparable, the author suggests that the control index reported should be used. It appears to be a reasonably quantitative measure of control of diabetes from a statistical point of view.

Archives of Dermatology and Syphilology, Chicago

31: 615-776 (May) 1935

Dermatosis of Monocytic Leukemia. S. T. Mercer, Seattle.—p. 615.
*Cutaneous Moniliasis Associated with Oral Thrush: Unusual Case. J. G. Downing and J. B. Hazard, Boston.—p. 636.
Fungistatic and Fungicidal Effects of Two Wood-Preserving Chemicals on Human Dermatophytes: Ortho (2 Chlorophenyl) Phenol Sodium and Tetrachlorphenol Sodium. L. M. Wieder, Milwaukee.—p. 644.
Dermatitis from Grapes. J. M. Anderson, Salt Lake City.—p. 658.
LXVIII. Cultivation and Study of Pityrosporum Ovale, So-Called Bottle Bacillus of Unna. M. Moore, St. Louis.—p. 661.
*LXIX. Generalized, Subcutaneous, Gummatous, Ulcerating Sporotrichosis: Report of Case with Study of Etiologic Agent. M. Moore and R. L. Kile, St. Louis.—p. 672.
Fatality from Exacerbation of Latent Tuberculosis Due to Thio-Bismol in Cases of Yaws. C. M. Hasselmann, Manila, P. I.—p. 686.
Contributors to History of Syphilis of Nervous System: Ulrich von Hutten (1488-1524). M. Moore and H. C. Solomon, Boston.—p. 692.

Cutaneous Moniliasis Associated with Oral Thrush.—Downing and Hazard observed a case of moniliasis in which there were markedly hyperkeratitic lesions on the face. Mild, general forms of therapy proved effective in the treatment of the lesions of the skin, whereas inhalations of ethyl iodide had no effect. The type of Monilia isolated in this case is not usually present on normal skin. The organisms from lesions of the mouth and the face were yeastlike in structure, produced segmented mycelia, did not form ascospores, fermented certain sugars with the formation of acid and gas, did not coagulate milk and were pathogenic for rabbits. The first four of these characteristics are specific for the genus Monilia or Parasaccharomyces. In view of their pathogenicity for rabbits, as well as the fermentations of sugar, the fungi may be placed in the group Parasaccharomyces, described by Nye. Except for the fact that no formation of gas was observed in galactose, these organisms might be positively identified as Monilia, type II, described by Stovall and Bubolz, which includes, among other species, Monilia albicans Craikii, Monilia psilosis Ashfordii and Monilia pinoyi Castellanii. Since the most characteristic biochemical reactions are obtained in maltose and saccharose, the organism would seem to belong to Monilia, type II, in spite of the failure to form gas when grown in galactose. The species Monilia albicans, described by Benham, presents the same mycologic aspects as the organisms isolated in this case.

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Generalized Sporotrichosis Cured—Report of a Case.—Moore and Kile cite a case of generalized, subcutaneous, gummatous, ulcerating sporotrichosis with a possible pulmonary complication and subsequent cure. The condition closely simulated tertiary syphilis, the syphiloid type of sporotrichosis. The organism recovered from an active, unruptured lesion was identified as Sporotrichum Beurmanni, a species that is considered as doubtfully distinct from Sporotrichum Schenckii. The presence of symptoms in the pulmonary apparatus with subsequent and simultaneous cure along with cure of the cutaneous lesions leads the authors to suspect a similar infection. The absence of Sporotrichum both in smears and in cultures of the sputum on several occasions cannot be accounted for unless one presupposes, as have several authors, a production of toxin —either exotoxin or endotoxin—which is liberated by the fungus and localized in the lungs. However, the existence of airborne spores indicates the possibility of a pulmonary complication, and the failure to find the organism in a few attempts does not rule out the possibility of infection. The patient was given a saturated solution of potassium iodide up to 40 drops (2.6 cc.) three times a day. The lesions were dressed with a 5 per cent iodine ointment. The medication seemed to have a specific effect in clearing up the subacute inflammatory phases of the infection in the lungs. In a month the skin lesions were almost completely healed, but medication was continued for another month. The patient has been free from lesions for two and a half months, without recurrences.

Archives of Internal Medicine, Chicago

55: 873-1084 (June) 1935

*Cardiovascular Syphilis: Early Diagnosis and Clinical Course of Aortitis in Three Hundred and Forty-Six Cases of Syphilis. E. P. Maynard Jr., J. A. Curran, I. T. Rosen, C. G. Williamson and Claire Lingg, Brooklyn.—p. 873.
Confusing Clinical Manifestations of Malignant Renal Neoplasms. C. D. Creevy, Minneapolis.—p. 895.
Alterations of Electrocardiogram in Diseases of Pericardium. E. H. Schwab and G. Herrmann, Galveston, Texas.—p. 917.
*Experimental Peripheral Gangrene: Effect of Estrogenic Substance and Its Relation to Thrombo-Angiitis Obliterans. E. J. G. McGrath, Cincinnati.—p. 942.
*Metabolism in Undernutrition: Its Changes During Treatment by High Caloric Diet. J. M. Strang, H. B. McClugage and M. A. Brownlee, Pittsburgh.—p. 958.
*Fat Tolerance in Hyperthyroidism. Opal E. Hepler, Chicago.—p. 979.
Dissemination of Amebiasis. F. W. O'Connor, New York.—p. 997.

Cardiovascular Syphilis.—In the hope of adding to the knowledge of cardiovascular syphilis, Maynard and his associates began a study in 1927 in the clinics of the Brooklyn Hospital for adults with cardiac disease and syphilis. Every patient in the clinic for syphilis who would consent was referred to the clinic for cardiac disease for complete cardiovascular examination. They found that syphilis of the aorta can be recognized much earlier than in the past. In order to discover its presence it is necessary that every syphilitic patient be examined regularly by methods used in making a diagnosis of cardiovascular disease. These examinations should be repeated every six months or once every year. Roentgenograms and fluoroscopic examination provide the most reliable means of deciding whether abnormality of the aorta is present in early syphilis. Heart failure occurs only in those patients in whom syphilitic involvement has passed beyond the stage of simple aortitis. In the patients studied, myocardial failure appeared only after the development of aortic insufficiency, aneurysm or narrowing of the coronary arteries. Multiple gummas may be regarded as a cause of heart failure, but this condition was not encountered in the present study. It is well known that these four manifestations are late lesions. Symptoms of heart failure usually prompt patients to seek relief in clinics for cardiac disease. Since these tend to occur late in cardiovascular syphilis and since no special routine effort has been made in the past to examine syphilitic patients for evidence of cardiovascular disease, the discovery of aortitis has been delayed. It is probably not true that syphilitic aortitis is a late lesion occurring, on the average, twenty years after the occurrence of the chancre. It is the authors' opinion that involvement of the aorta begins soon after the chancre has appeared and that, in the past, discovery of the presence of the disease has been delayed by the late development of symptoms referable to the heart and more especially by inadequate methods of examination.

Experimental Peripheral Gangrene.—McGrath derived from his experiments the fact that female rats previously intoxicated with ergotamine tartrate in amounts sufficient to produce gangrene of the tail were protected from the development of the gangrene by adequate amounts of theelin. The chi square test of probability demonstrates conclusively that the results are not attributable to the operation of chance alone. At first glance it would seem that theelin had no protective action on the male rats of the experiment. A mathematical analysis of the mean results, however, indicates that there was a significant delay in the onset of trophic changes in the male rats of the first series receiving theelin as compared with the onset in males not receiving theelin. The delay was not encountered in the later series of males. The discovery of this phenomenon of delay suggests the possibility that theelin may have some effect on the male, if administered in sufficiently large doses. Experiments testing this hypothesis are in progress. The mean times of appearance of the major trophic changes—pallor, cyanosis, blackness of the tail and demarcation of the gangrenous portion—are compiled together with the mean extent of the gangrenous process in the tails under increasing doses of ergotamine. Analysis of these means indicates a significant increase in the speed with which the trophic disturbances occur, varying directly with the increase of the dose of ergotamine. Such a relationship is not apparent in the extent of gangrene. The parallelism between the sex limitation of thrombo-angiitis obliterans and the protection of the female rats from ergotamine gangrene by an excess of theelin is indicated. It was noted that within this parallelism lies the suggestion that there may be in thrombo-angiitis obliterans a basic etiologic disturbance which is possibly endocrine, and that the failure of the disease to manifest itself in women, or at least its presence in a form so mild as to escape clinical notice, may be associated with a protective action of the estrogenic principle of the ovary.

Metabolism in Undernutrition.—Strang and his co-workers state that studies of the basal metabolism, nitrogen metabolism and efficiency of digestion of patients with severe degrees of undernutrition showed no abnormalities in the factors that could cause the initiation or persistence of pronounced states of undernourishment. The changes in these three factors, which were observed as a result of either the high caloric intake or the increases in weight dependent on it, indicated no new principles of metabolism that might militate against the successful treatment of undernutrition by dietary measures.

Fat Tolerance in Hyperthyroidism.—Hepler experimented on adult dogs in an attempt to determine the effect of hyperthyroidism on fat metabolism. Twenty-two adult dogs were used; four died of acute thyrotoxicosis and the observations on three others were discontinued because of infections. Thyrotoxicosis was produced by feeding 10 Gm. of desiccated thyroid daily with the food. Within a week after the feeding of thyroid was begun the dogs began to show loss of weight, great excitability and diarrhea. The feeding of thyroid slightly decreased the initial blood fat during the first month, while the height of hyperthyroidism was being reached. Continued feeding of thyroid was accompanied by an increase in the initial blood fat above the normal value. During the first period of feeding of thyroid there was a decrease in the tolerance of the animal for fat, as demonstrated by the increased curve for blood lipoids. The cholesterol values remained within normal limits during the period of feeding of thyroid. During the rest period after the first period of feeding of thyroid, when the animal was in a state of hypothyroidism, the fat and cholesterol values increased. The blood fat and cholesterol decreased during the second period of feeding of thyroid, possibly because in part of a resistance of the animal to a second administration of thyroid. Two explanations for these results are suggested. 1. The thyroid extract injures by its toxic effect the tissue cells, rendering them incapable of maintaining their normal capacity for storing or utilizing fat. 2. In hyperthyroidism the metabolism of the body is established at a higher level and the fuel constituents of the blood—fat and sugar—likewise must be established and maintained at a

higher level in order to sustain this increased metabolism. The author believes that the second explanation is the more satisfactory.

California and Western Medicine, San Francisco

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California State Board of Health, with Comments on Its Activities During the Last Two Years. H. Morrow, San Francisco.—p. 337.
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Cervical Cancer: Autopsy Study of Women Dying with Cervical Cancer After Radiation. D. G. Morton, San Francisco.—p. 345.
Relapsing Fever. L. H. Briggs, San Francisco.—p. 350.
Mechanism of Carbon Dioxide Therapy, with Especial Reference to the Lungs. A. J. Wineland, Los Angeles.—p. 354.
Primary Carcinoma of the Ureter. C. P. Mathé and E. de la Peña, San Francisco.—p. 357.
Spinal Cord Injuries: Their Treatment. H. W. Fleming, San Francisco.—p. 363.
Malarial Treatment of General Paresis. F. J. Van Meter, Norwalk.—p. 366.
Herpes Zoster: Some of Its Clinical Aspects. M. R. Somers and Pearl S. Pouppirt, San Francisco.—p. 370.

Canadian Medical Association Journal, Montreal

32: 475-608 (May) 1935

Study on Blood Coagulating Substance Produced by Staphylococci and Its Relation to Disease. M. Pijoan, Montreal.—p. 476.
Plasma Chlorides in Pneumonia and Their Clinical Significance. A. F. Fowler, Montreal.—p. 482.
Some Problems in Surgical Treatment of Carcinoma of Intestines. A. Moir, Peterborough, Ont.—p. 485.
*Irradiated Cholesterol in Cure of Human Rickets: Preliminary Communication. F. F. Tisdall, T. G. H. Drake and A. Brown, Toronto.—p. 490.
Types of Malignant Disease Treated by Radium at the Cancer Relief and Research Institute in Manitoba. D. Nicholson, Winnipeg, Manit.—p. 492.
*The Lipopenia of Fever. E. M. Boyd, Kingston, Ont.—p. 500.
Rupture of the Diaphragm: Report of Two Cases. R. Magee, Toronto.—p. 506.
Mental Disorders with Biologic Background. F. N. Walker, Toronto.—p. 509.
Examination of the Gynecologic Patient. H. B. Atlee, Halifax, N. S.—p. 516.
Some Simple Observations and Procedures of Assistance to the Practitioner in Diagnosis and Eradication of Tuberculosis. R. G. Ferguson, Fort San, Sask.—p. 524.
Pulmonary Embolism. J. S. Reid, Toronto.—p. 529.
Treatment of Nail Punctures. H. S. Dolan, Montreal.—p. 532.
Incidence of Goiter Among Saskatoon School Children—1934. G. Binning, Saskatoon, Sask.—p. 533.
Use of Purgatives. V. E. Henderson, Toronto.—p. 538.
Spontaneous Subarachnoid Hemorrhage Simulating Diabetic Coma: Report of Two Cases. H. C. Jamieson and J. W. Scott, Edmonton, Alta.—p. 540.
Actinomycosis: Analysis of Twelve Cases. E. L. Pope, Edmonton, Alta.—p. 542.
Nembutal in Sea Sickness. F. L. McLaughlin, London, England.—p. 544.

Irradiated Cholesterol in Cure of Rickets in Premature Infants.—Tisdall and his associates treated two rachitic premature infants with irradiated cholesterol. They found that the daily administration of 750 international vitamin D units of irradiated cholesterol (equivalent in rat units to 3 drops of viosterol in oil 250 D or 2 teaspoonfuls of a good grade of commercial cod liver oil) produced rapid healing of acute rickets during the winter months. Roentgenograms of both infants taken after irradiated cholesterol had been administered for seven weeks showed good healing of the rickets. At the present time there is evidence that there may be no less than four, and possibly six, chemical substances, each with a different vitamin D effect. The antirachitic potency of viosterol as measured on chickens is only about one-fiftieth that of cod liver oil, unit for unit. Blue fin tuna liver oil, unit for unit, has about one-sixth the antirachitic effect on chickens of cod liver oil. Irradiated cholesterol has been found to be just as effective in the cure of rickets in chickens as cod liver oil. Yoder has reported that cholesterilene sulphonic acid has antirachitic properties when fed to rats. Its action, however, is apparently different from the vitamin D of irradiated cholesterol. From work on human beings Hess has suggested that the vitamin D in irradiated milk is a different substance from the vitamin D in cod liver oil, although recent work by the authors does not substantiate this suggestion.

The Lipopenia of Fever.—The results of Boyd's investigation demonstrate that in fever one has to deal with an alteration in the concentration not only of cholesterol but of all the blood lipids. The onset of fever is accompanied by a temporary lipemia involving all the plasma lipids except cholesterol esters. As fever continues, a lipopenia develops, as the result of a diminished concentration of plasma phospholipids, cholesterol esters and free cholesterol, with an increased concentration of neutral fat. When the temperature subsides, all the values return approximately to the range of those in normal persons. Concurrently with these changes in plasma the concentration of lipids in the red blood cells exhibits exactly the opposite variations. Thus during fever the cellular values of free cholesterol, phospholipid and, usually, ester cholesterol are increased, while the level of neutral fat falls. The iodine number of the total fatty acids of plasma rises in the early days of fever, indicating the presence of unsaturated fatty acids, which are replaced by more saturated fatty acids as fever persists. The increase in the lipid content of the red blood cells does not appear to bear any causal relationship to the fall in plasma lipids. The total amount of lipids which these cells are capable of removing from plasma is small, because fats are not oxidized to any extent, if at all, in these cells. In the early days of fever the carbohydrate reserves of the body are burned and the fats are mobilized in the blood. As fever persists the fats are used as fuel and the transport of fatty acids from the depots to the muscles, and so on, becomes very active. The transport fats are rapidly removed from the plasma and the reserves are gradually used up, producing loss in weight and, in extreme cases, emaciation.

Canadian Public Health Journal, Toronto

26: 209-260 (May) 1935

*Antiabortus Serum. C. A. Mitchell, F. A. Humphreys and R. V. L. Walker, Hull, Que.—p. 209.
Amebic Dysentery: Its Public Health Significance and Control. A. Bolduc, Montreal.—p. 215.
Common Poisonings: I. Poisonings Common in General Practice. V. F. Stock, Toronto.—p. 225.
Id.: II. Common Industrial Poisons. A. R. Riddell, Toronto.—p. 231.
Id.: III. Poisonings Common in Children. J. R. Ross and A. Brown, Toronto.—p. 237.
Estimation of Common Fresh Water Plankton. D. H. Matheson, Hamilton, Ont.—p. 244.
Safeguarding Montreal's Food Supply. A. J. G. Hood, Montreal.—p. 247.

Antiabortus Serum.—Mitchell and his associates produced a filtrate by growing Brucella abortus strain 244 on a 2 per cent glycerin broth for three months. The organisms were separated from the filtrate by passing the liquid through several thicknesses of cotton and subsequently through a porcelain filter. The filtrate was then evaporated in a water bath at 100 C. to one tenth of its original volume. Many experiments were conducted with this product. The results demonstrated that this filtrate stimulated the formation of agglutinins and complement fixing substances in the blood of the majority of inoculated animals, these substances making their appearance about the seventh day after the inoculation. This suggested that perhaps a serum containing protective properties might be prepared by inoculating a horse with the concentrated filtrate. Consequently a horse was chosen for experiment. On the thirty-fourth day, complement fixing substances disappeared from the blood. Serum drawn on the eighteenth and the fortieth day was tested on guinea-pigs and was found to possess no protective properties. It therefore appeared that any protective property which a serum might possess was not altogether dependent on its agglutinin or complement fixing substances; also that the filtrate was unable to stimulate the formation of protective substances or constantly to stimulate the formation of agglutinins and complement fixing substances. After a rest of two months the horse was again chosen for experiment. It was inoculated with 1,800 cc. of a culture of Brucella abortus 244, grown for ninety-six days. The horse tolerated this massive dose reasonably well. On the seventh day the agglutinin titer rose to 1:40,000 and kept on mounting, until on the nineteenth day it reached almost 1:320,000. No complement fixing substances made their appearance in the blood. Blood was drawn on the nineteenth day, identified as 43 C and tested for protective properties on guinea-pigs. When administered to guinea-pigs previous to a challenge inoculation of Brucella abortus, serum 43 C conferred a degree of protection. When administered after infection was established,

no protection was conferred. Normal horse serum given before a challenge inoculation conferred no protection. Another normal horse was inoculated on three successive days with Brucella abortus 244 incubated ten days. After an interval of nine days, inoculations were used of the same strain of culture but incubated 185 days; 10 cc. was given on two successive days, but the resulting reaction was so marked that only 5 cc. was given on the following day. With extreme care the daily inoculation was gradually increased until 1,500 cc. caused no reaction. On the sixty-fourth day following the initial inoculation, blood was drawn and the serum tested on guinea-pigs for protective properties. A degree of protection was conferred on guinea-pigs when the serum was administered before inoculation with live organisms. Since the serum gave evidence of possessing protective properties when used on the guinea-pigs, the antiserum has been issued for the treatment of twenty-eight cases of undulant fever. Six cases showed no improvement following the administration of serum. The remaining twenty-two have shown exceptionally satisfactory improvement. In fact, in many of these cases recovery, following the inoculation of relatively small amounts of serum, is remarkable.

Delaware State Medical Journal, Wilmington

7: 81-122 (May) 1935

Fear. M. A. Tarumianz, Farnhurst.—p. 81.
Economic and Population Situation at the Delaware State Hospital at Farnhurst. Persis F. Elfeld, Farnhurst.—p. 85.
Alcoholic Psychoses. J. W. Ballard, Farnhurst.—p. 89.
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The Work of the Observation Clinic, 1931-1935. E. Klein, Farnhurst.—p. 96.
Epidemic Encephalitis: Case. B. G. Lawrence, Farnhurst.—p. 100.
General Paresis: Treatment with Diathermy. G. J. Gordon; Farnhurst.—p. 102.
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Study of Children of Psychotic Parents with Respect to Factors Revealed on Intelligence Examinations. W. C. Shipley, Farnhurst.—p. 109.
"Normal" White and Colored Children: Comparative Study. Marion McKenzie Font, Farnhurst.—p. 111.
Recreation: Factor in Therapy. Audrey D. Deniston, Farnhurst.—p. 114.
Effect of Economic Security on Mental Health. Zilpha M. Guilfoil, Farnhurst.—p. 117.
Some Clues to Treatability from the Standpoint of the Social Worker. Adelia Smith, Farnhurst.—p. 119.

Endocrinology, Los Angeles

19: 255-382 (May-June) 1935

Menstrual Dysfunctions in Disorders of Personality: Their Nature and Treatment. E. B. Allen, White Plains, N. Y.—p. 255.
Changes in Endometrium After Female Sex Endocrine Therapy: Consideration of Effect of Antuitrin-S in Human Subjects. J. Rock, Brookline, Mass.—p. 269.
Diabetes Insipidus: Treatment with Intermedin and Pitmelanin: Preliminary Report of Five Cases. H. H. Turner, Oklahoma City.—p. 275.
Successful Ovarian Therapy in Case of Severe Preadolescent Eunuchoidism. H. Lisser, San Francisco.—p. 284.
Thyroid and Senescence: Structural Transformations of Thyroid in Old Age and Their Functional Interpretation. G. C. Dogliotti and G. N. Nutti, Florence, Italy.—p. 289.
Anterior Pituitary Hormone Content of Hypothalamus of Dogs. G. Pighini, Reggio Emilia, Italy.—p. 293.
Effects of Pituitrin, Pitressin and Pitocin on Copper Reducing Substances in Serum and Urine of Dogs. A. R. McIntyre, R. F. Sievers and H. F. Elias, Omaha.—p. 298.
Experiments with Theelin and Galactin on Growth and Function of Mammary Glands of Monkey. E. Allen, W. U. Gardner and A. W. Diddle, New Haven, Conn.—p. 305.
*The Aschheim-Zondek Test with Mature Mice. A. G. Sar-Louis, Cleveland.—p. 314.
Endometrial Studies. G. S. McClellan, Doris Phelps and J. C. Burch, Nashville, Tenn.—p. 321.
Acquired Resistance to Thyroid Stimulating and Pseudoluteinizing Hormone of Cattle Anterior Pituitary. P. Max, Mary M. Schmeckebier and L. Loeb, St. Louis.—p. 329.
The Relation of Blood Volume to Certain Glands of Internal Secretion: Effect of Thyroid and Gonad Ablation. Mae Friedlander, N. Laskey and S. Silbert, New York.—p. 342.
Effect of Spaying on Body Growth and Organ Weights of the Albino Rat. C. B. Freudenberger and O. A. Billeter, Salt Lake City.—p. 347.

The Aschheim-Zondek Test with Mature Mice.—Sar-Louis states that the Aschheim-Zondek test may be performed on mature, even gravid, animals. The reading of the test may be made after thirty-six hours, although increased intensity and rapidity of luteinization are more striking after from seventy-two to 100 hours. The increased intensity and rapidity of luteinization are indicated by luteinization of interstitial tissue, giving the section a more confluent appearance; luteinization of theca of immature follicles; partial luteinization of a follicle or cyst, so that both granulosa and corpora lutea cells are seen in the same follicle; increase in the number of corpora lutea atretica and corpora lutea cysts, and increase in the number and size of central hemorrhages. When the animal is not in the preestrous or estrous phase, the presence of hemorrhages alone is significant. These changes are so striking that there is no possibility of confusing them with the physiologic changes observed in the ovaries of mice at any stage of the sexual or estrous cycle. Further experiments are being carried out to determine whether there is any quantitative or qualitative difference between the ovarian reaction in mice following injections of the gonadotropic hormone of the anterior pituitary and those observed following the injection of pregnancy urine.

Florida Medical Association Journal, Jacksonville

21: 469-536 (May) 1935

The Physician and His Government. H. L. Pearson, Miami.—p. 479.

Georgia Medical Association Journal, Atlanta

24: 159-198 (May) 1935

Notes on History of Medical Association of Georgia, 1920-1935. A. H. Bunce, Atlanta.—p. 159.
Woman's Auxiliary to the Medical Association of Georgia, 1924-1935. Mrs. A. H. Bunce, Atlanta.—p. 182.
Gastro-Intestinal Complications of Pulmonary Tuberculosis: Review of Case. A. W. Hobby, Atlanta.—p. 185.

Journal of General Physiology, New York

18: 599-790 (May 20) 1935. Partial Index

Paradoxical Relation Between Zeta Potential and Suspension Stability in S and R Variants of Intestinal Bacteria. Eleanore W. Joffe and S. Mudd, Philadelphia.—p. 599.
Physical-Chemical Difference in Antibodies Against S and R Variants of Single Bacterial Strain. Eleanore W. Joffe, Philadelphia.—p. 615.
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Correlation of Oxidation and Phosphorylation in Hemolyzed Blood in Presence of Methylene Blue and Pyocyanine. J. Runnström and Leonor Michaelis, New York.—p. 717.
Theory of Visual Intensity Discrimination. S. Hecht, New York.—p. 767.

Journal of Immunology, Baltimore

28: 331-412 (May) 1935

Factors Influencing Speed of Flocculation. K. Ando and T. Komiyama, Dairen, South Manchuria.—p. 331.
Diphtheria Toxin Produced on Semisynthetic Medium. K. Ando and T. Komiyama, Dairen, South Manchuria.—p. 345.
*Rôle of Convalescent Serum in Preparalytic Poliomyelitis. M. Brodie, New York.—p. 353.
Individual as Factor in Antidiphtheria Immunity: I. Antitoxic Responses of Groups of Guinea-Pigs. J. M. Neill, J. Y. Sugg, New York, and L. V. Richardson, Nashville, Tenn.—p. 363.
Id.: II. Titers of Individual Guinea-Pigs at Times Remote from the Last Injection of Antigen. J. Y. Sugg, New York; L. V. Richardson, Nashville, Tenn., and J. M. Neill, New York.—p. 385.
*Incidence of Serologic Types of Hemolytic Streptococci in Recent Cases of Erysipelas: Extent of Protection of Antierysipelas Serum Against These Erysipelas Strains as Tested on White Mice. Sophie Spicer, Mary F. Gonshorek and Emily L. Spicer, New York.—p. 399.

Convalescent Serum in Preparalytic Poliomyelitis.—The use of serum, once paralysis has set in, is contraindicated, as in one of Brodie's monkeys there was no muscular recovery. In two animals, 230 and 295 cc. of whole blood failed to hold the course of the disease in the late preparalytic stage. Although rapid and pronounced recovery after almost complete paralysis is rare in the experimental disease, it can scarcely be assigned to the effects of serum in one of these animals, for it recurred in the animal receiving the smaller dose. One monkey, receiving 135 cc. of serum when only a rise of temperature was present, was not benefited by the serum, nor was another receiving 208 cc. of serum when only temperature rise, cerebrospinal fluid pleocytosis and possibly a transient tremor of

one limb were present. One of these animals was treated at the earliest stage at which a definite diagnosis could be made, the other even earlier, and it is not likely that the course of the disease was any more severe than some of the fulminating human cases—those that really need the benefit of a therapeutic agent. Larger doses of serum than those given to patients and given earlier in the disease failed to halt the progress of the disease in experimental animals. The author's studies confirm the views of Neal and Harmon, who point out that there are no statistical data pointing to the therapeutic value of convalescent serum. The fact that 6 cc. of convalescent serum given three days after an extracerebral infective dose prevented paralysis, whereas 75 cc. given within the same period but after intracerebral inoculation failed to protect, suggests either that the serum failed to reach the central nervous system or else that the virus was fixed to the cells and could not be dislodged. Andrewes, working with vaccine virus, could prevent infection when the serum preceded the administration of virus, but, if given even five minutes after the virus, the serum was ineffective, probably because the virus was already fixed to the tissues. Poliomyelitis virus can spread through the central nervous system of an animal in the presence of demonstrable antibody.

Serologic Types of Hemolytic Streptococci in Cases of Erysipelas.—Spicer and her associates isolated sixteen strains of hemolytic streptococci of the beta type from fifty-two cases of erysipelas. Only two strains, a smooth and a coarse, obtained from the erysipelatous lesion of the same patient fell into one of their previously determined groups, that of type IV scarlet fever. Two other strains absorbed, one from each of two serums prepared with the new erysipelas strains. The antibacterial potency of two trysipelas serums prepared by different groups proved to be of low value, as evidenced by protection tests on white mice. A rabbit serum prepared from one of the strains of the new erysipelas series, while being highly potent against its own strain (homologous strain), protected against the other new erysipelas strains to about the same degree as did the antiscarlatinal serum. It protected, however, against the major type erysipelas strain used in the preparation of both erysipelas horse serums to a greater extent than was its own strain protected by either of the erysipelas serums.

Journal of Industrial Hygiene, Baltimore

17: 73-120 (May) 1935

Application of Chronaximetric Measurement to Industrial Hygiene Particularly to Examination of Lead Workers. F. H. Lewy, Philadelphia.—p. 73.

*Blood and Chronaximetric Examination of Lead Workers Subjected to Different Degrees of Exposure: Comparative Study. R. E. Lane, Manchester, England, and F. H. Lewy, Philadelphia.—p. 79.

Toxic Nephritis Following Exposure to Carbon Tetrachloride and Smoke Fumes. S. F. Dudley, Chatham, England.—p. 93.

Dermatitis in Vegetable Canning Industry. W. H. Schulze and C. L. Ewing, Baltimore.—p. 111.

Convenient Electrical Suction Device for Greenburg-Smith Impinger. T. C. Angus, London, England.—p. 114.

Blood Examination of Lead Workers.—Lane and Lewy made blood and chronaximetric examinations of 825 men working in four electrical accumulator factories in England. Of the men examined 71.3 per cent were normal by both methods, 14.2 per cent were abnormal by both methods and 14.5 per cent were abnormal by one or the other method only. Chronaximetry showed changes in the nerve irritability in the presence of normal blood observations in men who had in the past worked for many years under unfavorable conditions, though they had for at least the last two years worked under extremely good conditions; in newly engaged employees who had been unemployed for protracted periods; in certain cases of infection quite independent of lead absorption, and in a small group of workers who, in spite of heavy exposure, never developed punctate basophilia although they showed other signs of lead absorption. Pathologic blood changes were present in the absence of nerve changes in workers recently transferred to comparatively dangerous departments (this more subacute form of lead absorption leads to blood changes long before the nerve irritability becomes affected) and in various independent diseases, especially hemorrhages, that affect the blood picture but leave the nerves unchanged. As applied to the individual, following moderate or heavy exposure punctate basophilia appears more quickly and, following the cessation of exposure, disappears more rapidly than do the nerve changes; changes in the nerve follow exposure at a greater interval and once established are far slower to disappear, and small doses of lead received over a protracted period may lead to nerve involvement without blood changes. Malnutrition, whether quantitative or qualitative, is a factor that may lead either directly or indirectly to abnormal nerve irritability or may facilitate the appearance of nerve changes following lead absorption in the absence of blood changes.

Journal of Nervous and Mental Disease, New York

81: 613-744 (June) 1935

Blood Fats in Schizophrenia. A. T. Brice Jr., Palo Alto, Calif.—p. 613.

Further Contributions to Histopathology of Experimental Adrenalin Intoxication. A. Stief and L. Tokay, Szeged, Hungary.—p. 633.

Observations on Expert Testimony. F. J. Farnell, Providence, R. I.—p. 649.

*Rhinorrhea and Neoplasms of Central Nervous System. R. E. Britt, Burlington, Iowa.—p. 654.

Status Pigmentatus: Its Pathology and Its Relation to Hallervorden-Spatz Disease. M. Helfand, New York.—p. 662.

Rhinorrhea and Neoplasms of Central Nervous System.—Britt cites the three main routes by which the cerebrospinal fluid reaches the nose in rhinorrhea and neoplasms of the central nervous system: (1) communications from the floor of the anterior horn of the dilated lateral ventricle through the eroded cribriform plate with the nose, (2) openings from a persistent lumen in the olfactory bulb through the cribriform plate into the nose, and (3) an opening from the basal subarachnoid cistern through the cribriform plate into the nose. The first group is the most frequent one. In these cases the increased intracranial pressure causes destruction or atrophy of the cribriform plate. The dura overlying the cribriform plate contains tiny holes, which permit the exit of the olfactory nerves. As in most of the cranial nerves, the pia-arachnoid and the subarachnoid space continue for a distance along these nerves. Increased intracranial pressure will erode the cribriform plate and enlarge the tiny holes in the dura. As a result of this the ethmoid mucous membrane, which is interposed between the cerebrospinal spaces and the nasal cavity, gives way and permits the escape of the cerebrospinal fluid through the nostrils. Cerebral symptoms of intracranial pressure disappear as a result of the escape of cerebrospinal fluid. Of the symptoms of intracranial pressure, the most frequent to be relieved are the visual disturbances. The escape of cerebrospinal fluid through the nose is most frequently produced by brain tumors. Two cases are presented. In the first case a midline tumor of the cerebellum produced an internal hydrocephalus. The increased intracranial pressure eroded the lamina cribrosa and permitted the fluid to escape through the nostril. In the second case apparently a deep-seated neoplasm produced rhinorrhea. The exact mechanism in this case could not be determined.

New Jersey Medical Society Journal, Trenton

32: 253-340 (May) 1935

Classification and Treatment of Chronic Arthritis. J. W. Gray, Newark.—p. 259.

Value of Metaphen in Treatment of Genito-Urinary Infections. C. H. de T. Shivers, Atlantic City, and C. J. Cooney, Fort Wayne, Ind.—p. 264.

The Management of Idiopathic Ulcerative Colitis. M. Kraemer and M. Asher, Newark.—p. 275.

Some Practical Observations Concerning Ophthalmic Lenses. A. R. Sherman, Newark.—p. 282.

Deep Roentgen-Ray Therapy in Treatment of Disturbances of the Autonomic System. A. J. Delario and F. R. Meyers, Paterson.—p. 287.

A Plan of State Wide Medical Insurance on Contributory Basis. F. H. Glazebrook, Morristown.—p. 297.

Education for Physical Well Being. W. M. Lewis, Easton, Pa.—p. 300.

Infected Submaxillary Glands in a New-Born: Report of Case. F. H. von Hofe, East Orange.—p. 302.

Public Health Reports, Washington, D. C.

50: 695-724 (May 24) 1935

Experimental Production of Silicosis. L. U. Gardner.—p. 695.

Communicable Disease Meter: Device for Recording and Comparing Current Incidence of Communicable Diseases. R. Olesen.—p. 702.

Southern Medical Journal, Birmingham, Ala.

28: 489-582 (June) 1935

Treatment of Skin Cancer. B. Shelmire and E. C. Fox, Dallas, Texas. —p. 489.
Epithelioma of Skin and Oral Mucous Membranes. J. K. Howles, New Orleans.—p. 494.
*The Pathology of Agranulocytosis: Absolute Granulopenia. J. C. Norris, Atlanta, Ga.—p. 504.
Electrosurgery in Laryngeal and Pharyngeal Tuberculosis. G. H. B. Terry, Oteen, N. C.—p. 509.
Home Deliveries. Merle E. Smith, America, Ala.—p. 511.
Clinical Observations on Nontropical Sprue. A. M. Snell, Rochester, Minn.—p. 516.
Hemolytic Jaundice. G. V. Lewis, Little Rock, Ark.—p. 521.
Cancer of Anal Canal: Survey of Twenty-Five Cases. C. Rosser, Dallas, Texas.—p. 527.
Proliferative Lesions of Female Urethra. H. W. E. Walther and R. M. Willoughby, New Orleans.—p. 531.
Sigmoid Diverticulitis and Urinary Tract Infection: Case Reports. R. E. Cone, Galveston, Texas.—p. 535.
Clinical Results in Treatment of Malaria with Combinations of Quinine, Atabrine and Plasmochin During Four Years' Experience. E. C. Mitchell and D. W. Goltman, Memphis, Tenn.—p. 536.
*The Wassermann Reaction in Malaria. G. M. Saunders, Kingston, Jamaica, and T. B. Turner, New York.—p. 542.
Common Ocular Phorias and Their Management. W. B. Clark, New Orleans.—p. 546.
Drugs in Otolaryngology. T. W. Moore, Huntington, W. Va.—p. 552.
Hyperirritability as Related to Tetany Syndrome. H. T. Nesbit, Dallas, Texas.—p. 555.
Treatment of Acute Nephritis in Children. C. H. Webb, Shreveport, La.—p. 557.
The Bradycardias and the Tachycardias: Bedside Diagnosis and Treatment. W. W. Bondurant Jr., San Antonio, Texas.—p. 562.
Hypothyrosis. K. H. Beall, Fort Worth, Texas.—p. 565.
Some Essential Principles in Administration of Rural Health Organizations. W. K. Sharp Jr., Knoxville, Tenn.—p. 567.

The Pathology of Agranulocytosis.—Norris presents a review of seventy-six cases of agranulocytosis, fifty-four of which came to necropsy. The pathologic lesions usually seen in agranulocytosis are bone marrow hypoplasia, profound neutropenia, secondary anemia in chronic cases, thrombocytopenia, jaundice and hemorrhages, glandular and splenic enlargement, ulcerations of the buccal cavity and various parts of the intestinal tract and often thrombosis of the small arterioles. The complicating pathologic changes are abscesses, thrombophlebitis, septicemia, terminal hemorrhage, granulopenic pneumonia, either lobar or bronchial type, and toxic, degenerative changes in the brain, heart, liver, adrenals and kidneys. It might be stated that the disease is most often fulminant in character with the organs suffering most severely from infection and general disintegration of necrosing tissues, all of which may obscure the fundamental disease process.

The Wassermann Reaction in Malaria.—Saunders and Turner point out that a locality in which yaws is prevalent, malaria present and syphilis rare should afford opportunity to determine whether or not malaria causes nonspecific Wassermann reactions, because, in contrast to syphilis, yaws can be diagnosed with accuracy from the history of the disease alone. In a locality in which yaws is endemic, patients showing positive Wassermann reactions gave a definite history of yaws in all but about 17 per cent. The Wassermann reactions in a series of patients with malaria agreed almost exactly with the reactions among the general population of the area. In 135 malarial patients, seventy of whom had acute febrile manifestations, the Wassermann reaction was negative in all cases. In 123 malarial patients whose Wassermann reactions were positive or partly positive, yaws or syphilis was the assigned cause of the positive test in all but fifteen cases. Thirteen of these showed consistently positive reactions before and after the attack of malaria. Two had only one observation each. In eight yaws patients who had had positive Wassermann reactions reverting to negative after specific therapy, the Wassermann reaction remained negative during subsequent attacks of acute malaria. In two patients who had had yaws but whose Wassermann reactions had become negative, there was slight fixation of the complement with 0.1 cc. of serum in each case during an attack of malaria. Most of the patients with anticomplementary reactions had had yaws. The proportion of anticomplementary reactions was higher for the malarial patients than for the general population.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Physical Medicine, London

10: 1-22 (May) 1935

*Some Menopausal Syndromes and Their Treatment by Diathermy. C. A. Robinson.—p. 3.
Nervous and Mental Disorders in Middle Age. R. D. Gillespie.—p. 6.
The Care of the Feet in Middle Age. A. T. Fripp.—p. 8.
Deafness in the Middle Aged. C. H. Thomas.—p. 10.
Nasal Catarrh in Middle Age. A. L. Yates.—p. 13.
Progressive Relaxation and Diseases of Middle Age. E. Jacobson. —p. 14.
Short Wave Therapy: Further Clinical Experiences. M. Berry.—p. 16.
Id.: Cancer Campaign Investigation. R. G. Canti.—p. 18.

Treatment of Menopausal Syndromes by Diathermy.—Robinson groups menopausal disturbances into (1) conditions that are directly due to the menopause, i. e., menstrual disturbances, subjective vasomotor phenomena, myxedema and menopausal arthritis, and (2) conditions which precede the menopause and which are aggravated by it, i. e., backache-cervicitis syndrome and backache-cervicitis-infective arthritis. This classification is etiologic. It is of practical value in that it gives an indication for an effectual line of treatment. He concludes that menopausal and decrescent arthritis are both due to some endocrine disturbance. Menopausal arthritis is amenable to treatment by intrapelvic diathermy, combined sometimes with thyroid extract—a form of treatment that acts in virtue of its effect on the underlying endocrine condition. Toxemias, originating in most cases many years before the onset of the menopause, are aggravated by it, sometimes resulting in quite new additions to the clinical picture, such as arthritis of the infective type. These conditions are also amenable to intrapelvic and intracervical diathermy—forms of treatment that act in virtue of their effect on the focus of infection.

British Medical Journal, London

1: 1013-1060 (May 18) 1935

Lengthening of Life by Modern Therapy in Pernicious Anemia and Diabetes. P. Stocks.—p. 1013.
Heat Stability and "Tenacity" of Tuberculin. H. J. Parish and R. A. O'Brien.—p. 1018.
Palatal Paralysis in Extrafaucial Diphtheria. G. W. Ronaldson and W. H. Kelleher.—p. 1019.
*Treatment of Lymphatic Leukemia, with Especial Reference to Use of Iodine. M. C. G. Israels.—p. 1021.
*Examination of Tuberculosis Contacts. E. Ward.—p. 1024.

Treatment of Lymphatic Leukemia.—Israels presents five typical cases of chronic lymphatic leukemia of moderate severity in which previous treatment had not been given. The patients were first given two or three weeks of treatment with compound solution of iodine and afterward x-rays. The results obtained bear out those reported by Friedgood so far as the reduction of the white cell count is concerned, but the beneficial effect on the clinical symptoms was not observed. It does not seem that iodine is of any effective use in lymphatic leukemia: the treatment produces results that compare poorly with those obtained by roentgen treatment even in favorable cases. In the majority of cases of chronic lymphatic leukemia roentgen therapy is capable of ensuring a rapid amelioration and may be unhesitatingly applied; it remains the therapeutic method of choice and iodine does not supplant it. With regard to the etiology of leukemia, it does not appear that the effect of iodine justifies any definite conclusions as to the relation of lymphatic leukemia to hyperthyroidism. Although in some cases the iodine caused a reduction in the white cell count, the failure of symptomatic relief, the lack of improvement in the anemia when present and the uninterrupted course of the condition suggest that the leukemic process itself was unaffected. A direct action of the iodine on the leukocytes seems to be a more likely explanation of this reduction than an action on the disease process. The evidence at present available is certainly not sufficiently clear to justify the use of thyroidectomy as a treatment for leukemia.

Examination of Tuberculosis Contacts.—Ward suggests the following modifications in the methods for the examination of tuberculous contacts: 1. To omit the routine overhauling of children. Children should not be neglected in any sense, but

they are already amply covered by the activities and anxieties of parents, teachers, health visitors, school medical officers and practitioners. The clinical examination of a child's chest is of little if any value, and tuberculous disease among children is rare. Delicate children to whom attention is directed should be sent to a preventorium, and children so selected should certainly be examined and roentgenographed. 2. Careful attention should be paid to all contacts past the school age and appointments made for roentgenography. If the roentgenogram shows disease or gives rise to suspicion, this should be followed up appropriately. A poor roentgenogram is worse than useless. 3. The practitioner should take more part in the tuberculosis campaign than at present. It is easy to destroy his sense of responsibility by assiduous departmental work, and with the loss of responsibility goes all interest in the campaign. He could help by securing roentgenography for wayward contacts and for adult members of other families whose appearance or history is suggestive, and also by securing the investigation of workshop or office contacts. Any suggestive roentgen observations can be followed up without difficulty.

Edinburgh Medical Journal

42: 241-292 (May) 1935

Insulin Requirements of Diabetic Outpatients. R. M. M. Lyon.—p. 241.
Primary Carcinoma of Liver in a Child. E. N. Jamieson.—p. 247.
Sir Charles Bell: Brief Sketch of His Life and Work. E. Bramwell. —p. 252.
Lobar Pneumonia and Its Serologic Treatment. J. M. Johnston.—p. 265.

Indian Journal of Medical Research, Calcutta

22: 595-862 (April) 1935

Further Observations on Indian Relapsing Fever: Part II. Serology of Relapsing Fever in Human Beings. J. Cunningham and A. G. L. Fraser.—p. 595.
Studies on Antigenic Structure of Vibrio Cholerae: Part VIII. Specific Carbohydrate Content and Serology of Acid-Soluble Fractions. R. W. Linton, B. N. Mitra and S. C. Seal.—p. 617.
Id.: Part IX. Dissociation and Changes in Chemical Structure. R. W. Linton, D. L. Shrivastava and B. N. Mitra.—p. 633.
Study of Vibrio Filtrates. R. W. Linton, H. Singh and S. C. Seal.—p. 659.
Identification of Common Rat Fleas of India. M. O. T. Iyengar.—p. 673.
Waves of Rhythmic Contractions and Relaxations in Perfusion Pressure Tracings of Blood Vessels of Frog (Rana Tigrina), with Especial Reference to Action of Adrenalin, Ergotoxine, Pituitrin, Barium Chloride, Janus Green and Ephedrine. S. A. Rahman and R. N. Abhyankar.—p. 687.
Modified Method of Estimating Arsenic Content of Indian Foodstuffs. A. C. Bose.—p. 697.
The Coccidia of Lizards. R. Knowles and B. M. Das Gupta.—p. 701.
Endamoeba of the Gecko. R. Knowles and B. M. Das Gupta.—p. 709.
Carriers of Vibrio Cholerae Who Enter Ceylon from South India. L. Nicholls.—p. 713.
Biochemical Investigations on Different Varieties of Bengal Rice: Part I. Chemical Composition of Various Rice Samples. K. P. Basu and S. N. Sarkar.—p. 745.
Id.: Part II. Enzymic Digestibility of Rice Starch: Action of Taka Diastase. K. P. Basu and S. N. Sarkar.—p. 759.
Chemistry and Pharmacologic Action of Toddalea Aculeata. B. B. Dey, P. P. Pillay, J. C. David and N. Rajamanikam.—p. 765.
*Action of Emetine on Activity of Adrenal and Thyroid Glands. R. N. Chopra, J. C. Gupta and A. C. Roy.—p. 771.
Improved Method of Recording Amplified Electrical Changes in Tissues for Pharmacologic Work. R. N. Chopra and N. N. Das.—p. 777.
Chemical Examination of Bark of Moringa Pterygosperma. S. Ghosh, R. N. Chopra and A. Dutt.—p. 785.
Vitamin C Value of Some Common Indian Fruits, Vegetables and Pulses by Chemical Method. B. Ahmad.—p. 789.
Nature of Pulmonary Tuberculosis in Adult Punjabis. T. A. Hughes. —p. 801.
Hematologic Studies in Indians: Part I. Hemoglobin Estimation Methods. L. E. Napier and C. R. Das Gupta.—p. 809.
*Incidence of Hepatic Cirrhosis in South India. T. B. Menon and D. R. Annamalai.—p. 827.
Splenic Enlargement in Malignant Hepatoma: Note. T. B. Menon and D. R. Annamalai.—p. 837.
Types of Meningococci Isolated During 1934 Epidemic of Cerebrospinal Meningitis in India, with Especial Reference to Manufacture of Prophylactic Vaccine. M. L. Ahuja and N. Singh.—p. 839.

Action of Emetine on Activity of Adrenals and Thyroids.—The results that Chopra and his co-workers obtained from their studies show that the epinephrine content in normal rabbits, as estimated by the biologic method, varied from 1.36 to 1.44 mg. per gram weight of the gland. With the colorimetric method the results were higher and varied from 3.42 to 3.64 mg. per gram of the gland. The epinephrine content of the adrenals after a series of eight injections of emetine is definitely lower, varying from 0.87 to 1.096 mg. per gram weight of the gland. The results as determined by the colorimetric method show that, after a series of injections, the epinephrine content becomes less than that of the control animals and varies from 1.85 to 2.52 mg. per gram weight of the gland, as compared to 3.42 to 3.64 mg. These figures, though much higher than those obtained by the biologic method, were, however, sufficiently conclusive as regards the action of the emetine injection on the adrenals. The iodine content of the thyroid is decreased and runs more or less parallel with the epinephrine content.

Incidence of Hepatic Cirrhosis in South India.—Menon and Annamalai state that an analysis of mortality returns of Madras, of the hospital admissions in the Government Rayapuram Hospital and of necropsy records of recent years shows a much higher incidence of hepatic cirrhosis there than in Europe. A study of 177 hospital cases shows that cirrhosis has no special association with alcoholism. The race incidence is more or less in relation to the race proportion in the general population, as judged by the hospital admissions. A careful study of twenty-four specimens of hepatic cirrhosis has shown that the portal type is the most common and that this is similar to the so-called alcoholic type encountered in Europe and America. Mallory's toxic type, anatomically considered, is rare. From necropsy records, some positive evidence is brought forward to show that there is a possible relationship between portal cirrhosis and dysentery, as emphasized by Rogers. But the evidence is more in favor of bacillary dysentery than amebic. This may be given two interpretations. It may be that, in cirrhosis of the liver, the resistance of the intestine is so lowered that dysenteric lesions might occur as a complication, or there may be a more direct etiologic relationship between dysentery and hepatic lesions. Cirrhosis of a capsular type has been observed in three cases of malaria.

Journal of Anatomy, London

69: 297-398 (April) 1935

Observations on Conducting System of the Heart. D. M. Blair and F. Davies.—p. 303.
Growth of Pelvis in Madder-Fed Pig. C. G. Payton.—p. 326.
Dissections of Nephrons from the Human Kidney. H. C. Pai.—p. 344.
Anatomy of Intercostal Spaces in Man and Certain Other Mammals. M. A. H. Siddiqi and A. N. Mullick.—p. 350.
"Sexual Skin" in Marmoset. A. E. Russell and S. Zuckerman.—p. 356.
Oviducal Epithelium of the Mouse. P. G. 'Espinasse.—p. 363.
*Development of Nerve Endings in Human Fetus. Evelyn E. Hewer. —p. 369.
Cerebral Hemispheres of the Kiwi and of the Emu (Apteryx and Dromiceius). E. H. Craigie.—p. 380.

Development of Nerve Endings in Fetus.—Hewer states that sensory nerve endings are almost completely developed before the motor endings begin to differentiate. Muscles and nerve endings are differentiated first in the tongue: at all stages the neuromuscular mechanism of the hand and arm is further advanced than that of the foot and leg. An argentophil fiber plexus is already present at eight weeks of development: this may perhaps be the fundamental sympathetic plexus. By twenty weeks of development, pacinian bodies and spindles are well differentiated; by twenty-eight weeks the motor plates are just beginning but are very rudimentary except in the tongue. The functional significance of the ages at which certain nerve endings develop is discussed.

Journal of Laryngology and Otology, London

50: 317-388 (May) 1935

*Cysts and Retention Abscesses of the Nasopharynx: Report of Eighty-Eight Cases. B. M. Kully.—p. 317.
Esophageal Lesions Encountered in Cases of Dysphagia with Anemia. J. McGibbon.—p. 329.
*Plasmacytoma of the Petrous Temporal Bone and Base of Skull. D. F. Cappell and R. P. Mathers.—p. 340.

Cysts and Retention Abscesses of Nasopharynx.—Kully discusses eighty-eight cases of cysts or retention abscesses of the nasopharynx observed during the last six years. He emphasizes the importance of a more thorough examination of the nasopharynx. The so-called retention abscess of the nasopharynx is not an abscess. It represents an inflammatory closure of the mouth of an adenoid recess or of the pharyngeal bursa with retention of secretion, bacteria, cells and other inflamma-

tory detritus. As the cavity dilates, owing to the accumulation of secretion, it partakes of the nature of a cyst. The contents appear to be grossly purulent, but on microscopic section there may be few polymorphonuclear cells and a definite cyst wall. This condition should be described as an infected retention cyst. Sixty-two of the cases in the report were of this type. Postnasal discharge was the most common symptom. It was rarely profuse and in two instances had a foul taste and a foul odor. It was due to an overflow from the purulent cyst or to its periodic rupture, followed by discharge of contents. Some of the discharge came from a frequently associated hypertrophy of the mucous glands of the adenoid or from the mucous cells present in the membrane lining the adenoid crypts. Chronic pharyngitis and chronic laryngotracheitis secondary to the postnasal discharge were invariably present. Enlargement and tenderness of the posterior cervical glands were present in twenty-seven patients. They were frequently associated with stiffness and rigidity of the muscles of the posterior cervical region. Occipital headaches were present in twelve patients and were usually localized at or below the external occipital protuberance in contradistinction to sphenoidal headaches, which are usually diffused over the occiput. In some instances the headaches were relieved immediately on puncture of the cyst. Mild earache was present in only five patients. Tinnitus and moderate deafness were present in seven. In nine patients there was a history of persistent fever of a duration of several months. Seven of these patients became fever free after operation and remained so during observation over a period of weeks. It is difficult to evaluate the relation of pathologic changes in the nasopharynx to various focal conditions.

Plasmacytoma of Petrous Temporal Bone and Base of Skull.—Cappell and Mathers report the case of a solitary plasma cell tumor involving the petrous temporal bone, mastoid process and base of the skull. The growth resulted in extensive destruction of the bony tissues but did not invade the brain. Complete paralysis of the sixth and seventh cranial nerves was produced, and there were also symptoms due to pressure on the ninth, tenth and eleventh nerves in the jugular foramen and to direct pressure on the pharyngeal wall. The authors found no record of a similar case in the literature.

Journal of Tropical Medicine and Hygiene, London

38: 117-132 (May 15) 1935

Renal Glycosuria: Study of Its Relationship to Diabetes Mellitus, Its Etiology and Diagnosis Based on Records of War Pensioners Treated Under the Ministry of Pensions. S. Vatcher and M. Douglas.—p. 117.

Relation of Electric and Hygrometric Conditions of Atmosphere to Surgical Skin Infections in Egypt. A. Knipfer.—p. 123.

Lancet, London

1: 1025-1082 (May 4) 1935

New Aspects of Deficiencies in Nutrition. D. Hunter.—p. 1025.

*Mandelic Acid in Treatment of Urinary Infections. M. L. Rosenheim.—p. 1032.

*One Hundred Cases of Chronic Arthritis Treated by Gold. H. S. Pemberton.—p. 1037.

Study of Case of Idiopathic Hypoproteinemia. C. L. Cope and H. K. Goadby.—p. 1038.

Technic of Evipan Anesthesia. A. D. Wright.—p. 1040.

Mandelic Acid in Treatment of Urinary Infections.—Rosenheim used mandelic acid as a therapeutic agent that might replace the ketogenic diet in the treatment of urinary infections. It appears to be effective in cases of urinary infection unassociated with urinary obstruction. He treated twelve cases of urinary infection, six of which were pyelitis of pregnancy. His object has been to obtain a high urinary concentration of the acid at a p_H favorable to its bacteriostatic action. The routine method adopted has been to give 12 Gm. of mandelic acid daily in divided doses, while the fluid intake is limited to 1 quart. At the same time the acidity of the urine is increased by the administration of ammonium chloride. Mandelic acid is readily soluble in water and, in the form of the sodium salt, is not unpalatable. The standard mixture used contains 3 Gm. of the acid to the fluid ounce, just neutralized by sodium bicarbonate (1.6 Gm.) and flavored with lemon. One ounce of this mixture is given four times a day, while eight cachets, each containing 1 Gm. of ammonium chloride, are also given during the day as with the ketogenic diet. There is no simple test for the presence of mandelic acid in urine, but extraction of the twenty-four hour urine has shown that on this dosage a satisfactory urinary concentration of the acid is obtained. The following method of extraction has been employed: The urine was acidified with phosphoric acid, saturated with ammonium sulphate and extracted three times with ether. The ethereal layer, dried over sodium sulphate, was evaporated and the residue dried in a weighed flask in an evacuated desiccator. The weight of the crude extract has been taken as a measure of the amount of mandelic acid present in the urine. Improvement in the successful cases has mostly begun after a few days on mandelic acid, and the urine has usually become sterile within from ten to twenty-one days. A striking feature of the treatment has been the rapid improvement in the clinical condition of the patients. The toxic effects disappear rapidly. The patient's condition is subjectively improved, the headaches and backache diminish, and the frequency of micturition becomes less even though the urine may still be infected. The disappearance of nocturnal frequency has been taken as a rough guide to the progress of the treatment. Of the six cases of urinary infection, unassociated with pregnancy, all have been clinically improved, while three have been cured.

Chronic Arthritis Treated by Gold Salts.—Pemberton gives the results of treatment during a period of five years of 100 cases of chronic arthritis treated with three preparations of gold salts. In many of the more chronic cases, all known types of treatment for arthritis had already been tried without success; and while response to gold is roughly in inverse proportion to the duration of the lesion, a considerable number of these cases exhibited a striking superiority of this to any previous method of therapy. Along with gold, in the obese, the diet was reduced in calories and carbohydrate, the former roughly to 1,000 calories daily. In the more usual type of rather underweight patients a full diet rich in vitamins A and D was given, but with carbohydrate restriction in those showing a diminished dextrose tolerance. If hydrochloric acid was absent from the gastric juice or diminished in it, 0.4 per cent of the acid was given by mouth generously. When the course of gold has been completed, massage, diathermy and both active and passive movements have usually been started. If effusions were large and recurrent, they were aspirated and, whenever possible, deformities such as obstinate knee flexion were treated by firm splinting. The preparations of gold have all proved to be toxic to some patients. Twelve cases have been cured, thirty-eight very much improved and thirty-eight improved. Twelve remain the same.

1: 1083-1138 (May 11) 1935

Ureterovaginal Fistula. A. E. Webb-Johnson.—p. 1083.

*Treatment of Puerperal Fever by Antistreptococcus Serum: Some New Evidence and a Retrospect. L. Colebrook.—p. 1085.

Further Studies on Etiology of Acute Rheumatism. B. Schlesinger, A. G. Signy and W. W. Payne.—p. 1090.

Clinical Trials with New Antityphoid Serum. C. J. McSweeney.—p. 1095.

*The Posterior Lobe of the Pituitary Gland: Its Relationship to the Stomach and to the Blood Picture. E. C. Dodds, G. M. Hills, R. L. Noble and P. C. Williams.—p. 1099.

Treatment of Puerperal Fever by Antistreptococcus Serum.—Colebrook states that there is no trustworthy clinical evidence that the administration of antistreptococcus serum for the treatment of human infections by hemolytic streptococci has had any specific curative effect. The evidence obtained in puerperal fever cases at his hospital suggests that such administration may sometimes have an unfavorable effect on puerperal infections by hemolytic streptococci, and this impression is to some extent supported by the evidence of animal experiments. It is in the best interest of the patient suffering from an infection by hemolytic streptococci not to interfere with her immunizing mechanisms until one can be sure that such intervention does no harm. Although serums have been produced that would protect animals against infection by streptococci of artificially enhanced virulence, there is no satisfactory evidence that a serum has ever been produced which would afford more than very slight protection (occasionally) against hemolytic strepto-

cocci freshly isolated from acute human infections and of various serologic types. Similarly there is no evidence that any antistreptococcus serum has ever exerted a curative effect in animals infected by such hemolytic streptococci freshly isolated from human infections. It is a matter for regret that antistreptococcus serums should have been issued for clinical trial so long before satisfactory experimental evidence as to their curative effects in animals was available or a strong presumption existed (from unequivocal in vitro experiments) that such a curative effect would be obtained in man. Until the knowledge of immunization against the hemolytic streptococci has progressed further, it would seem desirable to discontinue the use of antistreptococcus serums in the treatment (and prophylaxis) of puerperal fever and surgical sepsis.

Posterior Lobe of the Pituitary Gland.—The experiments of Dodds and his co-workers on laboratory animals show that the injection of extract of the posterior lobe of the pituitary is capable of causing a temporary inhibition of the secretion of hydrochloric acid, in such a way that the stomach will not react to the histamine stimulus for a period of about six hours. Other workers have called attention to the fact that injection of pituitary extract reduced gastric acidity. Changes occur in the blood of animals injected with this extract. Thus, if a rabbit is injected subcutaneously with the preparation, it will be found on the fifth day that a severe anemia has developed, the blood count being reduced from 6,000,000 down to as low as just over 1,000,000 red cells. The hemoglobin is also reduced, but not proportionately to the same extent. On the fifth or sixth days a reticulocytosis appears, which may rise to as high as 50 per cent. There is a marked anisocytosis and a definite macrocytosis. If the animals are killed, obvious changes are seen in the spleen, such as hemorrhagic infarction, and there is evidence of a stimulation of the blood destroying system. The intestine is full of bile, and it would appear that the anemia may possibly be ascribed to an increased blood destruction. If left alone, the animals will recover completely.

Medical Journal of Australia, Sydney

1: 543-572 (May 4) 1935

Massive Dosage of Intramuscular Liver Extract in Treatment of Pernicious Anemia. Hilda J. Gardner and I. J. Wood.—p. 543.
Record of Last Year's Work at the Hobart Infectious Diseases Hospital (Vaucluse). C. N. Atkins.—p. 547.
Detection of Hypersensitiveness. C. Sutherland.—p. 549.
Value of Nux Vomica Treatment. F. Arden.—p. 551.
Study of Early Infancy: Plea for Cooperation Between Sciences of Medicine, Psychology and Education. P. M. Bachelard.—p. 554.

Tubercle, London

16: 337-384 (May) 1935

Pulmonary Tuberculosis in Adolescence and Youth. P. F. Armand-Delille.—p. 337.
Intrathoracic Tuberculosis Among the Chinese, with Especial Reference to the Province of Szechuan. H. G. Anderson.—p. 350.

Journal of Oriental Medicine, South Manchuria

22: 53-64 (April) 1935

Biochemical Study of Nitril Compound: Part VI. Fluctuation of Glutathione Content in the Living Body During Aromatic Nitril Toxication. M. Fukushima.—p. 53.
Fluctuation of Glutathione in Living Body During Period of Hydrocyanic Acid Poisoning. M. Fukushima.—p. 54.
Clinical Diagnologic Comparative Studies on Blood Pictures and Sedimentation of Erythrocyte of Typhoid Diseases (Typhoid Fever, Paratyphus and Manchurian Fever). M. Okamoto.—p. 55.
Hot Springs in Manchuria and Mongolia in Relation to Skin and Urinary Diseases. K. Yajima.—p. 53.
Standardization of Antidysenteric Serum (Shiga) by the Polysaccharide Precipitating Test (Zozaya). K. Kurauchi and S. Nagata.—p. 56.
Pharmacologic Action of Opium (Alkaloid) as Observed in Tail Raising Action. B. Terada and M. Honda.—p. 57.
"Chiang-lang," a Chinese Drug. B. Terada.—p. 58.
Intestinal Parasites of Prisoners in Dairen Prison. Y. Saito.—p. 59.
Cow's Milk in Manchuria and Mongolia: Part IV. Nonprotein Nitrogenous Substance. M. Sugiura.—p. 60.
Abnormal Origin and Course of Right Subclavian Artery: Case. K. Miyashita.—p. 61.
Pulmonary Abscess Caused by Migration of Adult Ascaris in Bronchii, with Review of Literature on Injuries Caused by Ascaris Lumbricoides: Report of Case. T. Kamimura.—p. 62.
Study on History of Bacteria Artificially Introduced into Body and Factors of Infection: Report IV. Effect of Cooling of Body on Pneumonias Experimentally Produced by Diplococcus Pneumoniae. N. Nishikawa.—p. 63.
Changes of Blood in Kala-Azar. M. T. Sei.—p. 64.

Annales d'Anatomie Pathologique, Paris

12: 493-619 (May) 1935

Histogenesis of Ectopic Chorio-Epitheliomas. H. Hamdi.—p. 493.
So-Called Karyoklasic Poisons: Action of Arsylene and of Acetates of Cobalt and Nickel. M. Ickowicz.—p. 501.
Acute Lesions of Aorta and Pulmonary Artery in Course of Malignant Endocarditis. G. Albot and A. Miget.—p. 511.
Lymphatics of Palatine Tonsils. C. Röhlich.—p. 523.
Cellular Tissue and Plantar Topography. H. Liaras.—p. 537.
*What Becomes of Carbon Injected Intravenously? B. Ménétrel.—p. 559.

Carbon Injected Intravenously.—As a result of animal observations and a necropsy on an individual previously treated with carbon, Ménétrel concludes that the particles of carbon are deposited especially in the liver, spleen and lungs. It is, however, difficult to determine the laws that govern the distribution of the grains in these tissues. They are doubtless similar to those obtaining with thorium dioxide sol. There are some vascular reactions but never any inflammatory ones, even when the carbon has been fixed for a long time. No system is apparent unless it is the particular affinity of the carbon particles for the reticulo-endothelial tissue. No massing is found near the vessels or lymphatics. It is probably safe to conclude from these observations that carbon causes no lesion, and, having played its part in the defense of the organism against infection, is fixed in certain tissues without producing any inflammatory reaction.

Paris Médical

1: 445-476 (May 18) 1935

Surgical Possibilities in Chronic Pancreatitis Without Icterus. L. Bérard and P. Mallet-Guy.—p. 445.
*Aleukemic Hepatosplenic Myelosis. P. Carnot, J. Caroli and A. Busson.—p. 449.
Circulatory Rôle of Liver. M. Villaret, L. Justin-Besançon, R. Cachera and R. Fauvert.—p. 455.
Pseudovesicular Forms of Subacute Pancreatitis. E. Chabrol and M. Cachin.—p. 463.
Biliary Surgery in Light of Direct Angiocholedocography. P. Moulonguet.—p. 466.
Hydatid Cyst of Spleen. P. Carnot and R. Cachera.—p. 470.

Aleukemic Hepatosplenic Myelosis.—Carnot and his collaborators report two cases of aleukemic hepatosplenic myelosis diagnosed during life by means of splenic puncture. The authors say that three points are especially noteworthy from their observations and examinations: 1. Aleukemic myelomatosis is an associated disorder of hepatosplenic coupling. 2. Splenic puncture must be considered an indispensable diagnostic method and is alone capable of serving as a contraindication for splenectomy. It also serves as an indication for roentgen therapy. 3. Puncture alone confirms, during life, the myelo-erythroblastic tissue reaction in the follicular forms of splenic anemia.

Schweizerische medizinische Wochenschrift, Basel

65: 489-508 (June 1) 1935

Meralgia Paraesthetica and Appendicitis. M. Roch.—p. 489.
Examination of Persons in Environment of Patients with Pulmonary Tuberculosis. M. Dressler.—p. 490.
*Pseudorheumatic Pains, Particularly in Shoulders and Arms in Connection with Heart Disease. H. Wantoch.—p. 497.
Echinococcus Disease During Childhood. A. Bonzanigo.—p. 498.
Iontophoresis in Treatment of Disorders of Nervous System. P. M. Besse and J. Erlich.—p. 500.
Simple Method for Determination of Urea by Means of Chlorinated Lime and Bromide. M. Gross.—p. 502.

Pains in Shoulders and Arms in Heart Disease.—Wantoch calls attention to connections between pains in the joints and muscles and heart disease, giving especial attention to the pseudorheumatic pains that most frequently appear in the shoulders and in the upper extremities and are related to angina pectoris. These pains are not only an accompanying symptom of angina pectoris but quite often the initial and for a long time its only symptom. The early recognition of the character of these pseudorheumatic pains is of importance for the treatment. Although the localization in the left shoulder and arm predominates, they may appear also in other portions of the body, for instance in the throat, with radiation into the neck, the lower jaw and the teeth; then there may be headaches that are chiefly localized in the occiput. The pains that accom-

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pany angina pectoris may appear also in the form of epigastralgia and hypogastralgia, particularly on the left side, or in the form of pains in the right side of the thorax, or in the right lower or upper extremity, or in portions of it, such as the olecranon or the thumb. However, such pseudorheumatic pains appear not only in angina pectoris but also in cardiac insufficiency. The author observed a number of these cases and points out that the cardiogenic pathogenesis of the pains was corroborated by their prompt disappearance following medication with digitalis.

Giornale di Tisiologia, Naples

pp. 69-92 (April 30) 1935

Tuberculous Laryngitis of Hematogenic Origin Preceding Development of Acute Miliary Tuberculosis: Case. G. Mariani.—p. 70.
*Hemoptysis Complicating Intravenous Injections of Calcium in Treatment of Pulmonary Tuberculosis. F. D'Agostino.—p. 74.
Allergy and Immunity to Tuberculosis. A. Cantani.—p. 75.

Hemoptysis Complicating Injections of Calcium.—D'Agostino believes that the cause of hemoptysis immediately following an intravenous injection of calcium in patients suffering with pulmonary tuberculosis is due to one of the three following factors: 1. In cases in which the clinical picture is characterized by the sudden appearance of pain of the lancinating type and circumscribed to a thoracic area, hemoptysis is probably due to an infarct caused by the presence in the blood of a small embolus formed during the injection. 2. In cases in which the only clinical symptom is hemoptysis, it is probably due either to the physicochemical changes of the blood produced by the entrance of calcium ions into it or to the rupture of small vessels in the vicinity of the pulmonary lesion. The mechanism of production of the rupture of pulmonary vessels is as follows: Sudden changes of the sympathetic tonus, caused by the presence of calcium ions in the blood, result in a transient increase of the blood pressure, during which the vessels near the pulmonary tuberculous lesion, which are more fragile than normal vessels, rupture and hemoptysis results. 3. In some cases hemoptysis originates in a condition of pulmonary congestion caused by the reaction of the pulmonary tissues to the entrance of calcium in the blood.

Prensa Médica Argentina, Buenos Aires

22: 987-1034 (May 22) 1935. Partial Index

Clinical Applications and Physiologic and Pharmacologic Action of Alpha-Dinitrophenol (1, 2, 4). J. J. Spangenberg, L. Munist and A. Ardaiz.—p. 996.
Fibrin Bodies in Pleural Pneumothoracic Cavity. E. Aznarez.—p. 1096.
Value of Systolic-Diastolic Relation in Valvular Cardiopathies. A. Nanclares and J. E. Israel.—p. 1015.
*Frei's Intradermal Test and Hellerström's Blood Reaction. E. Criscuolo. —p. 1917.

Frei and Hellerström's Tests for Inguinal Lymphogranuloma.—Criscuolo advises the performance of Frei's test two or three times, with intervals of one or two weeks between the injections, in all suspected cases of inguinal lymphogranuloma. He uses, as an antigen, sterile pus from a lymphogranulomatous ganglion dissolved in physiologic solution of sodium chloride in the proportion of one part of pus to ten parts of the solution and performs the test by the intracutaneous injection of 0.2 cc. of the antigen. The pus is taken from a patient suffering with inguinal lymphogranuloma but not from the one in whom the test is going to be performed. The antigen, prepared by the author by desiccating the pus and keeping it in a vacuum and dissolving it in the physiologic solution of sodium chloride just at the time the test is going to be performed, retains its activity for more than one year. Hellerström injects Frei's antigen intravenously in his test for the diagnosis of inguinal lymphogranuloma. The first dose is 0.1 cc. and increases, if the test is repeated, by 0.1 cc. at every new injection to secure positive results that manifest themselves by chills and fever, eight or ten hours after the injection. The reaction is at its climactic point twelve or eighteen hours after the injection, and the condition of the patient returns to normal thirty-six or forty-eight hours later. When the amount of 2 or 3 cc. per injection is reached, the patient reacts no more, except after a period of four or five weeks during which he receives no injections. Hellerström's test is harmless and because of the febrile reaction of the organism to Frei's antigen when intravenously injected, the test is also of a therapeutic value (biologic treatment of inguinal lymphogranuloma). The test is more sensitive than Frei's and gives positive results earlier than Frei's test during the evolution of inguinal lymphogranuloma. The originators of the tests proved that the virus of lymphogranuloma is the common etiologic agent of inguinal lymphogranuloma, climatic bubo, esthiomene, chronic vulvar ulcers with elephantiasis and inflammatory stricture of the rectum.

Archiv für klinische Chirurgie, Berlin

182: 159-298 (May 22) 1935. Partial Index

*Results with Traction Therapy of Bone Fractures. H. Killian.—p. 159.
Wet Sterilization of Silk and Linen Thread. Konrich.—p. 199.
Studies on the Use of Alcoholic Formaldehyde Solution in Disinfection of the Operative Field. K. Daubenspeck.—p. 201.
Maintenance of the Magnesium Blood Content in Recklinghausen's Disease. J. Marx.—p. 214.
Arrested Development Due to Ossification of the Vertebrae. H. Meyer-Burgdorff and J. Klose-Gerlich.—p. 220.

Results with Traction Treatment of Bone Fractures.—Killian reports the results of the traction method of treatment of fractures of the extremities in the surgical clinic of the University of Freiburg (Prof. E. Rehn). Of 1,242 fractures of the extremities, 174 were treated by the method of continued traction or by a traction plaster cast. Twenty-eight of the latter were submitted subsequently to surgical intervention. Ten of these were treated by traction for the purpose of reduction only, and death from tetanus occurred in one, leaving seventeen failures to be accounted for. Analysis of the failures showed that in eight lack of union was due to failures of reduction in spite of maximum traction. All these were fractures of the femur. Interposition of muscle fibers between bone fragments prevented union in three, the cause was edema and thrombosis in two, and healing was not obtained in four because of an infection spreading from an infected wound. The greatest incidence of failures with the traction method is encountered in fractures of the femur, the percentage of failures running from 10 to as high as 20. The author emphasizes that the traction method has its definite indication as well as its limitations. In the estimation of the results obtained by any method with fractures of the lower extremities, one must keep in mind not only the preservation of the length of the extremity but the proper alinement and avoidance of joint complications as well. Categorical objection to early operative treatment of fractures is no longer justified. On the other hand, an attempt to obtain reduction by conservative means to the exclusion of all others is equally fallacious. The traction method is frequently a long and expensive one because of the necessity for roentgenologic control and continued supervision. It is contraindicated in diabetes. The author considers the traction plaster cast an improvement on the method because it allows of an early discontinuance of traction.

Deutsche medizinische Wochenschrift, Leipzig

61: 861-900 (May 31) 1935. Partial Index

*Therapeutic Application of Female Sex Hormones. C. Kaufmann. —p. 861.
Psychiatric Nosology. K. Schneider.—p. 867.
Fluctuations in Certain Ash Constituents in Potatoes. H. Steudel. —p. 872.
To What Extent Do Observations on Twins Permit Conclusions in Regard to Hereditary and Environmental Factors? F. Lenz.—p. 873.

Therapeutic Application of Female Sex Hormones.—Kaufmann outlines the possibilities and limitations of the therapeutic application of estrogenic and corpus luteum hormones. He discusses the application of these hormones in primary amenorrhea, stressing that this form of hormone therapy produces results in this condition only in exceptional cases. Secondary amenorrhea may be caused by other than genital factors; for instance, by tuberculosis or syphilis. For this reason it is essential to subject the patient to a thorough general examination before the treatment by sex hormones is instituted, for it is advisable only if the general examination is negative. Moreover, it should not be overlooked that an amenorrhea of one or two months' duration may develop in normal women, and the author considers hormone therapy unnecessary unless the amenorrhea has persisted for a longer period. He points

out that the administration of the corpus luteum hormone is often unnecessary in the treatment of secondary amenorrhea, large doses of estrogenic substance being sufficient. He discusses the symptoms of abolished ovarian function that develop following castration, during the menopause or in women with hypomenorrhea or oligomenorrhea and shows that the administration of adequate amounts of estrogenic substance tends to counteract these symptoms in a comparatively short period. The fourth group of disorders in which hormone therapy may be indicated are the hemorrhages resulting from glandular cystic hyperplasia of the endometrium. This condition is frequently the underlying cause in the so-called juvenile hemorrhages as well as in premenopausal hemorrhages. Since glandular cystic hyperplasia of the endometrium develops under the influence of a relative oversupply of follicular hormone and a deficiency of the corpus luteum hormone, the hemorrhages can usually be arrested by the administration of adequate amounts of corpus luteum hormone.

Klinische Wochenschrift, Berlin

14: 737-768 (May 25) 1935. Partial Index

*Hypercalcemic and Antitetanic Effect of Extirpation of Zone of Carotid Gland. J. Collazo, R. Resa and A. F. Cruz.—p. 748.

Decomposition of Group Specific Substances by Bacteria. F. Schiff.—p. 750.

Is There a Gastrogenic Polyglobulism? D. Singer.—p. 751.

*Successful Treatment of Corrosive Mercuric Chloride Poisoning with Repeated Venipunctures and Administration of Ringer's Solution. A. Korányi.—p. 753.

Relationship Between Tuberculosis and Psychosis. H. Stefan.—p. 754.

Hypercalcemic and Antitetanic Effect of Extirpation of Zone of Carotid Gland.—Collazo and his associates review the literature on the function of the carotid gland and describe their observations on dogs in which the adventitia of the vessels of the zone of the carotid gland had been removed. They observed a syndrome that was characterized by general debility with reduced muscular tonus, bradykinesia, apathy, paralysis of the eyelids, conjunctivitis, lack of appetite, dyspnea, emaciation, falling out of the hair and progressive cachexia. The syndrome terminated in fatal coma. The necropsy of these animals disclosed, in addition to several other changes, a hypertrophy of the parathyroids. The authors observed also that hypercalcemia is a frequent symptom in the animals in which the adventitia of the zone of the carotid sinus had been extirpated. In experiments on another group of dogs, they noted that the attacks of tetany, which were produced by the extirpation of the parathyroids, disappeared when the zone of the carotid gland was likewise extirpated on both sides.

Treatment of Poisoning by Mercuric Chloride.—The observation that animals poisoned with lethal doses of uranium could be kept alive when edema formation was induced by Leiter's plasmapheretic method, induced Korányi to try plasmapheresis also in poisoning with corrosive mercuric chloride. Dogs were given lethal doses of corrosive mercuric chloride and after the first twenty-four hours blood was withdrawn every day and large quantities of Ringer's solution were given. When these measures were carried out, the anuria that regularly occurs in poisoning with corrosive mercuric chloride either was entirely prevented or was quickly followed by profuse diuresis. The animals tolerated the treatment well, and after from eight to ten days of treatment the uremic manifestations and the albuminuria disappeared completely, so that the animals could be considered cured. Of the eleven animals that had been given lethal doses, only one died following an anuria of three days' duration. This favorable result in animal experiments induced the author to try this treatment in a patient with corrosive mercuric chloride poisoning. There was beginning oliguria, albuminuria, hematuria, an increase in the rest nitrogen, mercurial stomatitis, vomiting and diarrhea. Under the influence of daily venipunctures (300 cc.) and the daily oral administration of 5,000 cc. of Ringer's solution and the intravenous administration of 20 cc. of a 10 per cent solution of sodium chloride there developed a profuse diuresis, so that all uremic and toxic symptoms disappeared and the urine became normal again.

Monatsschrift für Kinderheilkunde, Berlin

61: 401-490 (May 8) 1935. Partial Index

Electrocardiographic Examinations in Children with Early, Acute Diphtheritic Myocardial Impairment. E. Kielhorn.—p. 406.

Observations on Mental and Physical Development in Twins. T. Brander.—p. 414.

*Modification of Blood Sugar by Oral Administration of Fat. H. Schönfeld.—p. 432.

*Treatment of Toxicosis in Nurslings with Intravenous Continuous Drop Infusion. I. Grube.—p. 439.

*Pathogenesis of Cerebral Complications of Whooping Cough. Carola vor dem Esche.—p. 446.

Modification of Blood Sugar by Administration of Fat.—Schönfeld calls attention to a report by Knauer and Hirsch-Kauffmann, in which they reported that the administration of oil to children resulted in a hyperglycemia just as did a sugar tolerance test. The author, however, in repeating the tests of those investigators observed that the administration of olive oil was followed by a hypoglycemia, the blood sugar being lowest forty-five minutes after the administration of the oil; that is, at the time when Knauer stated that he observed the highest blood sugar values. Several other investigators have obtained practically the same results with the oil administration as has Schönfeld. On the basis of his own observation and of those reported in the literature he concedes that the administration of oil may occasionally be followed by slight upward fluctuations in the blood sugar, but he states that these fluctuations remain within the physiologic limits. A noticeable decrease in the blood sugar is much more frequent after a fat tolerance test. In animal experiments likewise the blood sugar reducing action of the fat tolerance test was more noticeable than occasional slight increases. However, when oil was administered to rabbits after several days of starvation there frequently was a slight increase in the blood sugar, and if after that the animals were starved further there frequently developed after twenty-four or forty-eight hours an enormous hyperglycemia. This increase in blood sugar is the more surprising since it develops at a time when the blood sugar decreases in starving rabbits as the result of the depletion of the glycogen reserves. The author assumes that this hyperglycemia is the result of the disorganization of the metabolism of the carbohydrate or the metabolism of the liver, instability of these having occurred as the result of the starvation, followed by their being overtaxed by the fat tolerance test.

Continuous Intravenous Drip in Treatment of Toxicosis.—Grube resorted to treatment by intravenous drop infusion in sixteen nurslings with toxicosis. She employed the 5 per cent dextrose solution and carefully computed the quantity of fluid for each kilogram of body weight. The results of this treatment were disappointing. The exsiccation improved permanently or temporarily in some of the nurslings, but detoxication was effected in only three of the children. Only two children recovered.

Cerebral Complications of Whooping Cough.—In analyzing 1,115 cases of whooping cough, vor dem Esche detected 172 with signs of cerebral complications; that is, approximately 14 per cent. The mortality rate was almost 60 per cent in the cases with cerebral complications. She noted a higher incidence in young children; only twenty of the children with cerebral complications were more than 2 years old and the majority were less than 9 months old. The convulsions began frequently in the region of the facial nerve and then changed into generalized tonoclonic spasms, the duration varying between thirty seconds and several hours. In discussing whooping cough eclampsia, the author means chiefly convulsions. She reviews the literature on the pathogenesis of this condition and then discusses the various pathogenic possibilities in the analyzed material. She knows that the convulsions that develop in whooping cough are not of a uniform nature but may be caused by various pathologic processes. In classifying her material she differentiates two groups. In the smaller group, comprising thirty-eight cases, it was presumably a specific toxic impairment that produced angiospasm and its numerous sequels. In the other group of cases it could not be decided whether the cerebral manifestations were caused by the existing complication (menin-

gitis, predisposition to convulsions, hemorrhages and so on) or whether in addition to these there existed also the same specific impairment of the central nervous system as in the cases of the first group. The author thinks that whooping cough eclampsia as such plays an important part and that it is probably due to the action of the toxins on the regulatory centers of the cerebral vessels, which in turn results in a functional disturbance of the circulation in the form of a prestasis, stasis or angiospasm. Depending on the degree of toxic impairment and the subsequent circulatory disturbance, there develop reparable or irreversible tissue changes. In the first case clinical cure may follow, while in the second case defects remain or death occurs.

Münchener medizinische Wochenschrift, Munich

82: 773-814 (May 16) 1935. Partial Index

Treatment with Red Rays in Gynecology. H. Küstner.—p. 773.
Clinical Aspects of Infectious Distant Thrombosis. E. Krieg.—p. 776.
Is Disinfection of Suitable Bandage Material by Means of Pressing with a Hot Iron Permissible in Case of Aerial Warfare and Other Emergencies? F. Kortenhaus and Margarete Remy.—p. 782.
Differential Diagnosis of Muscular Tears of Leg. J. Volkmann.—p. 783.
*Treatment of Septic Processes by Means of Artificial Abscess. H. von Blomberg and S. von Forster.—p. 783.
Attempt to Treat Nocturnal Enuresis with Testis Hormone. F. Dietel.—p. 787.

Treatment by Means of Artificial Abscess.—Von Blomberg and von Forster say that improvement is often seen in patients with sepsis when local abscess formation takes place. They produce the artificial abscess on the thigh by a subcutaneous injection of from 1 to 2.5 cc. of sterile oil of turpentine. If the reaction capacity is poor, up to 3 cc. may be injected. It is generally advisable to postpone the opening of the abscess until the increased number of leukocytes in the blood begins to diminish again. As a rule the abscess is opened on the tenth day. The authors prefer a puncture incision on the lateral lower edge of the abscess and emphasize that the wound must be well drained. The authors resorted to the artificial abscess at first only in cases with an unfavorable prognosis. Later they produced the abscess also in septic infections, in which an accompanying parenchymal impairment of the liver or kidneys contraindicated intense chemotherapy. The authors treated twenty-seven cases, of which three terminated fatally. The fatal cases were one septic angina with incipient agranulocytosis, one sepsis with renal carbuncle, and one old urosepsis with pericarditis and pneumonia. In these cases the abscess did not form. In the cases in which the artificial abscess was successful, the improved general condition indicated that the turpentine abscess increases the defense functions of the organism.

Zentralblatt für Gynäkologie, Leipzig

59: 1153-1200 (May 18) 1935

Physiologic Increase in Blood Pressure Before and During Delivery. H. Obligmacher and E. Doerr.—p. 1154.
*Significance of Hypophyseal Emaciation for Disturbances in Ovarian Function. F. Stroebe.—p. 1156.
Pregnancy and Delivery in Endogenic Emaciation. W. Stoeckel.—p. 1159.
*Statistical Method in Fertility Problem and Myth of Normal Cycle of Twenty-Eight Days. J. G. H. Holt.—p. 1161.
Problem of Annular Placenta in Human Beings. E. Fauvet.—p. 1164.
Autotransplantation of Ovary Following Radical Operation of Carcinoma of Uterine Cervix for Prevention of Symptoms of Abolished Function. A. Mandelstamm.—p. 1170.

Hypophyseal Emaciation.—Stroebe calls attention to a group of women patients who are pale, the musculature of the upper and lower extremities is atrophic and the subcutaneous layer of fat is almost completely absent. Cyanotic areas often appear on the hands and, after prolonged standing, also on the lower extremities. The hair growth is often somewhat sparse. The appetite is impaired, and the patients complain of pains in the upper portion of the abdomen and of a dyspeptic pressure or of colic-like pains. The patients frequently complain of constipation. The systolic blood pressure, as a rule, does not exceed 100 mm. of mercury. The author considers reduction in the basal metabolism and amenorrhea of primary importance in this type of emaciation. This disorder is closely related to Simmonds' hypophyseal cachexia, in which there exists an atrophy of the hypophysis. The author thinks that in the disorder under consideration there is at least a functional disturbance in the hypophysis. He thinks it is advisable to administer hypophyseal preparations. Von Bergmann resorted to the implantation of hypophyseal tissue and obtained good results in four cases. Hypophyseal implantation has been done in seven cases and the menstrual flow was reestablished in two. Two hypophyses that had been taken fresh from calves were implanted into the omentum. Two months later, menstruation set in and since then had recurred every month. The patient's weight likewise increased following the implantation. The author's aim is not to recommend the implantation of hypophyseal tissue for all such cases but to emphasize the dominating influence of the hypophysis in cases of this nature.

The Myth of a Normal Cycle of Twenty-Eight Days.—Holt declares that the regular cycle of twenty-eight days is largely a myth. He and a collaborator have kept exact records of the menstrual periods of several hundred women for several years, and so far they have not found a single woman who always had her menstruation exactly after the same length of time. He admits that he found some women in whom three, at the most four, successive cycles were of the same length, but if Ogino's demand is to be followed and at least twelve successive cycles are to be recorded it may be said that the woman with an unchangeable menstrual cycle is a myth. To talk of "normal cycles" or of "regular twenty-eight day cycles" is incorrect. There are thousands of women who assert that their menstruation occurs with unchangeable regularity, but, if exact records are kept over a period of a year or at least nine months, it will be impossible to find such a woman.

59: 1201-1264 (May 25) 1935. Partial Index

*Treatment of Benign Hemorrhages with Radioactive Substances. H. Eymer.—p. 1202.
Do Pregnancy Toxicoses Result from an Allergic Condition? L. Seitz.—p. 1207.
*Functional Interrelations Between Adrenal Cortex and Gonads. S. Thaddea.—p. 1208.
Problems of Sterilization. K. Holzapfel.—p. 1213.

Treatment of Genital Hemorrhages with Radioactive Substances.—Eymer's report is based on observations on 661 women with nonmalignant uterine hemorrhages, who in the years between 1913 and 1934 were treated with radium or mesothorium. The women were either myoma patients or had hemorrhagic metropathy. The latter condition existed in 412 women whose genitalia were otherwise normal. Since 1920, when the technic of the treatment was considerably improved, the author has observed only a small number of cases in which the treatment was a failure. In one woman, who was less than 45 years old, total extirpation was done when the hemorrhage recurred, while in another woman renewed radium irradiation produced complete cure. Slight hemorrhages recurred in four women. Radium treatment failed also in four women with myoma; three were subsequently operated on, and in a fourth the radium treatment was followed by roentgen therapy. The author concedes that myomas are not always suited for treatment with radioactive substances. As a rule, only myomas that do not exceed twice the size of a fist are amenable to intrauterine radium therapy. Moreover, in cases in which the uterine cavity is rather large and irregular on account of protruding myomas, radium treatment is inadvisable, as is the case also in submucous myomas. To the question whether intra-uterine radium irradiation should be preceded by curettage the author answers that it is advisable in most cases. However, curetting may be unnecessary in women with myoma, in whom there is not the slightest suspicion of malignancy. Inflammations near the uterine cavity contraindicate intra-uterine radium therapy and, if inflammatory processes exist, the radium therapy must be postponed. The radioactive substance is enclosed in a brass container having a wall thickness of 1 mm. The author generally used from 50 to 60 mg. of radioactive element. From 2,000 to 3,000 mg. element hours is the usual dose for intrauterine irradiations; that is, if 50 mg. of element is used, it requires forty-eight hours to apply 2,400 mg. element hours.

Following irradiation, a rose-colored or brownish discharge may persist for several weeks. After pointing out that radium therapy is superior to roentgen therapy in the treatment of nonmalignant uterine hemorrhages, the author stresses that for some women any form of intra-uterine irradiations is inadvisable and mentions women with hypertension and "younger" women, that is, those still capable of bearing children.

Interrelations Between Adrenal Cortex and Gonads.—Thaddea points out that experimental studies have produced evidence indicative of a modification of the gonads by the adrenal cortex. A stimulating effect on the ovaries has been observed. In children with hyperplasia or tumors of the adrenal cortex, sexual disturbances, such as pubertas praecox, premature menstruation, pseudohermaphroditism and hyperplasia of the genital organs, have been observed. In Addison's disease, on the other hand, there often exists gonadal hypoplasia or even complete atrophy of the ovaries and, as a manifestation of these morphologic changes, disturbances in the sexual cycle (irregular menstruations, oligomenorrhea and amenorrhea) frequently appear. Moreover, conception is rare in Addison's disease. However, in spite of these indications of a relationship between the adrenal cortex and the gonads, it is doubtful whether the adrenal cortex secretes a substance that acts directly on the female genitalia. It is more likely that the active principle of the adrenal cortex influences the gonads by way of the anterior lobe of the hypophysis. It is certain that the hypophysis, the regulator of the functions of the female genitalia, has relations to the adrenal cortex. In view of the close biologic interrelations between vitamins and hormones, it must be assumed that the water soluble vitamin C has relations with the sexual sphere, as do the fat soluble vitamins. The author observed the extremely rare phenomenon of pregnancy in a woman with Addison's disease. In connection with this case he gave his attention to related problems, pigment formation, sodium chloride metabolism and adynamia. Clinical and experimental studies, conducted by him for the first time, disclosed radical changes in the carbohydrate metabolism in the pregnant woman who had Addison's disease, and these changes furnish more information about the physiology and the functional pathology of the adrenal cortex.

59: 1265-1328 (June 1) 1935

*Critical Evaluation of Indications for and Technic of Cesarean Section in Case of Fever During Birth. M. Henkel.—p. 1267.
Critical Report of 107 Cesarean Sections According to New Technic. H. Theiss.—p. 1275.
Our Cesarean Operations During Last Three Years. T. Pütz.—p. 1279.
Clinical Aspects of Ovarian Disgerminomas. H. Dworzak.—p. 1282.
*Therapy of Uterine Hemorrhages by Galvanic Irritation of Mammary Glands. L. Cronental.—p. 1288.
Value of Ergot Prophylaxis During Puerperium. B. Rosen.—p. 1295.

Cesarean Section in Case of Fever During Birth.—Henkel thinks that in aseptic cases in which a cesarean operation becomes necessary the transperitoneal, cervical intervention is the best method. He discusses the problem whether abdominal cesarean section may be done also in cases in which fever has developed in the course of the delivery. He concedes that, when signs of an infection exist, it is desirable to attempt first an evacuation of the uterus by the vaginal route. However, it is inadvisable to force a vaginal method at any price. To perform the cesarean operation in spite of an existing infection is advisable in protracted deliveries in which the termination of the delivery by the vaginal route is impossible or difficult and likely to cause tissue lesions, which may exert an unfavorable effect on the infection. Since the cervical transperitoneal cesarean operation is best for noninfected patients, there is no reason to deny that it is not for infected ones. Porro's method of complete extirpation of the uterus, which by some has been considered necessary for infected patients, the author regards as unnecessary in some cases. He gives a report of the eight cases of infection, in which he performed the abdominal cesarean operation. In three cases the uterus was extirpated (once on account of atonia), but in two other cases complete extirpation may not have been necessary. All eight patients recovered.

Treatment of Uterine Hemorrhages by Stimulating Mammary Glands.—Cronental calls attention to Kellat's report about the successful treatment of uterine hemorrhages by the galvanic stimulation of the mammary glands. Then he describes the method that he employed in the treatment of uterine hemorrhages. He applies to the mammary gland, with the exclusion of the nipples, flannel cushions saturated with a 0.33¼ per cent solution of potassium iodide, over which lead plates are fixed and then connected with the cathode. The anode is connected with the electrode introduced into the vagina. The latter is a carbon electrode, the noninsulated end of which is covered with a cotton tampon saturated with an aqueous 1:1,000 solution of calcium chloride and covered with gauze. The strength of the current varies between 15 and 20 milliamperes. The treatments are given every second day or daily, each one lasting from twenty to thirty minutes. The author employed the treatment in 334 cases and obtained improvement in more than 86 per cent. The hemorrhages were of three types: (1) metrorrhagia caused by essential endometritis, (2) metrorrhagia in inflammatory processes and (3) metrorrhagia in patients with fibrous degeneration and fibromyomas of the uterus. In the future the author intends to replace the galvanic current in some of the cases by diathermy. Moreover, he found that the vaginal electrode may be replaced by an abdominal plate electrode.

Vrachebnoe Delo, Kharkov

18: 99-192 (No. 2) 1935. Partial Index

Hypertonus: Attempt at Analysis of Its Genesis. D. D. Pletnev.—p. 103.
Water Exchange and Sodium Chloride in Hyperthyroidism. A. S. Beryland and T. N. Donskova.—p. 107.
Insulin Therapy and Heart. G. I. Kats.—p. 111.
*Formic Acid in Urine of Cancer Patients. L. M. Golber.—p. 119.
*Transfusion of Preserved Blood. G. G. Karavanov.—p. 131.

Formic Acid in the Urine of Cancer Patients.—Golber states that overloading with amino acids leads to an increase of formic acid in the urine. He refers to the unpublished work of Steppun in which the author expresses the idea that in the presence of lowered oxidation, such as occurs in cancer, a portion of the amino acids is split by hydrolysis with resulting formation of formic acid. Formic acid can likewise be formed in carbohydrate metabolism. Hydrolytic dissociation of lactic acid results in an acetic aldehyde and formic acid. Theoretically, because of deficient oxidation, formic acid in the urine of patients suffering from a malignant tumor should be increased. The author investigated the formic acid content of a twenty-four hour output of urine from forty patients suffering from malignant conditions, twenty-six patients having other than malignant disease and eight normal adults. The formic acid content of the urine of healthy adults varied between 16.5 and 21.1 mg. and that of patients presenting other than malignant disease between 16.5 and 31.9 mg. Diabetic patients presented a much higher content, from 59.8 to 139.1 mg. The formic acid content of urine from patients presenting a malignant condition varied between 34.7 and 101.6 mg. The author concludes that an abnormal amount of formic acid in the urine is characteristic of a malignant condition and may be used as a diagnostic test in such cases.

Transfusion of Preserved Blood.—Karavanov reports 102 transfusions of preserved blood in seventy-three patients. The method of preservation consisted in adding to each hundred cubic centimeters of blood 100 cc. of physiologic solution of sodium chloride and 0.6 cc. of sodium citrate solution. The mixture was kept at a room temperature of 6 C. Destruction of red cells ran parallel with the number of days of conservation. The author considered from five to seven days the permissible limit of conservation. In six instances, blood was taken from various donors of the same group without provoking a reaction. Among the 102 transfusions there were noted fifty-six reactions, or 67 per cent. A strong reaction was noted in 26 per cent, average in 25 and weak in 16.4. The author concludes that transfusion of preserved blood merits wide application in clinical work. It should be particularly valuable in cases in which an immediate transfusion is required. He stresses the necessity of reexamining the blood just before the transfusion for sterility and hemolysis.